SUPPLEMENT.

The Mining Journal,

RAILWAY AND COMMERCIAL GAZETTE:

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

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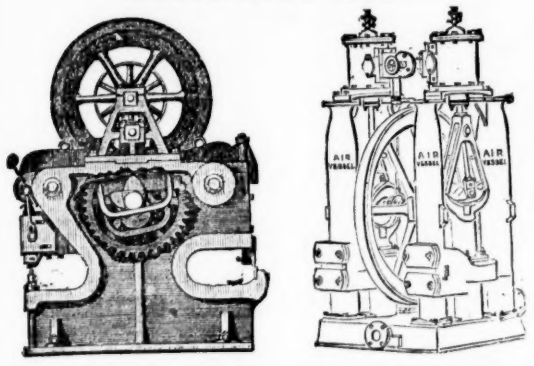

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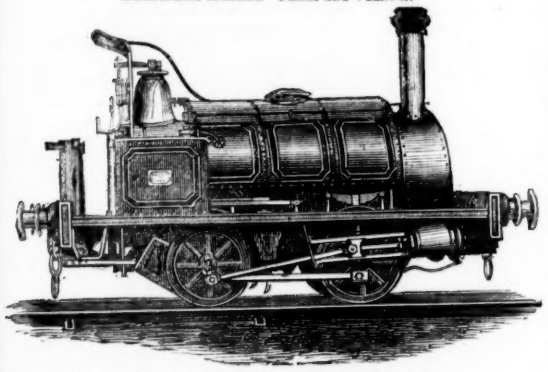

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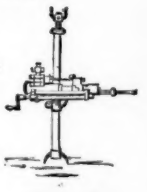

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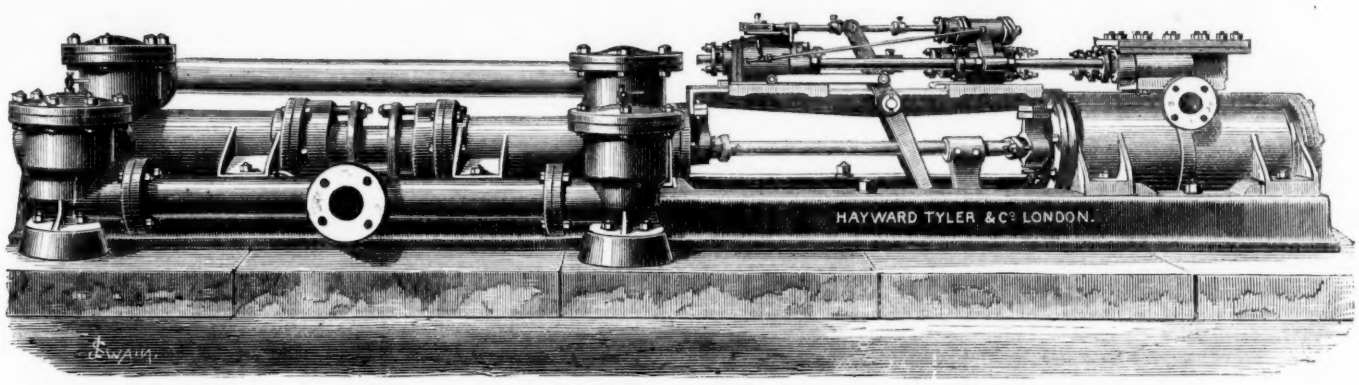

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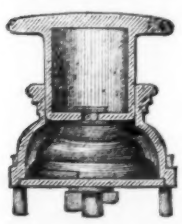

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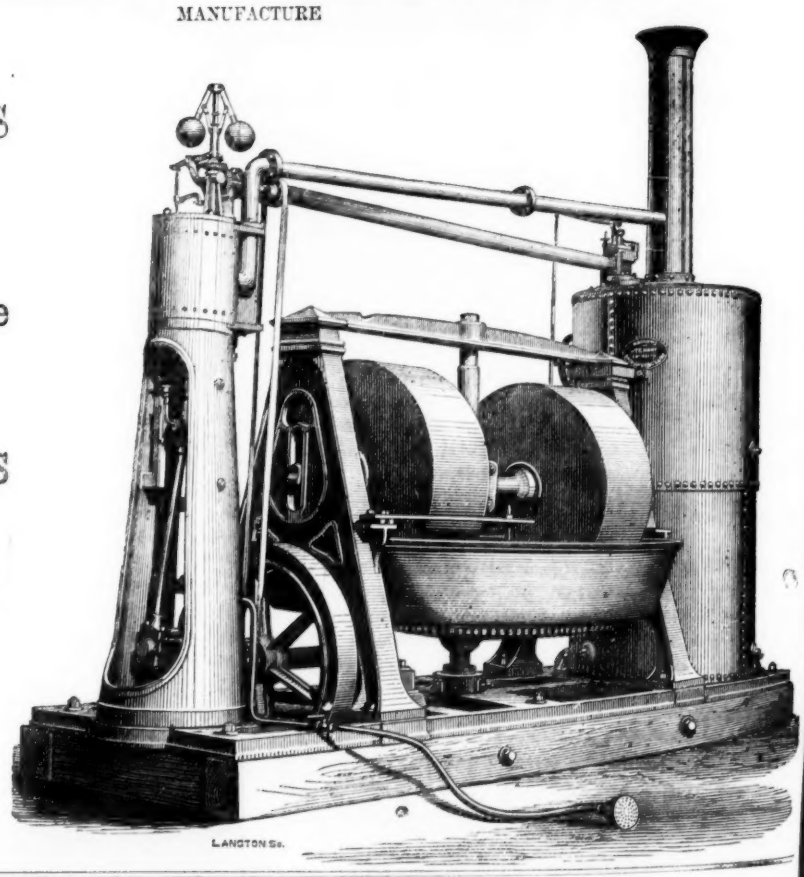

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Original Correspondence.

MINING IN NEW SOUTH WALES—No. II.

[*Continued from the Supplement to the Journal of Dec. 9.*]

One reason, and the principal one—why mining has never succeeded with us as it does in Victoria, California, Chili, &c., is the way in which companies have been formed to work (?) any newly-formed mine. First of all the owner of the ground asked and got an exorbitant amount, then the promoters took their bonus till, out of a probable subscribed capital of 20,000*l.*, there was about one-tenth left to develope the property. Then a manager advises the board (the directors on which probably never saw a mine, and would not know one if they did) to erect machinery, &c.; this swamps all the balance and runs into a thousand or so more. The board (sanguine enthusiasts) became security to the bank awaiting the first crushing or smelting, as the case may be, and if at the very outset that is not first-class, the shareholders refuse to pay calls, the bank sells the whole affair for 200*l.* or 300*l.*, and there it lies for years neglected. This is actually the history of at least nine-tenths of our failures, whereas had the purchasers at first insisted on the mine being bought for paid up shares only (and every honest owner of an undeveloped mine ought to be glad to get paid in that way), and then, before spending one penny in machinery or furnaces, subscribed 2000*l.* or so to raise at least 1000 tons of ore, they would then have known for certain whether it was worth while going further or not. At any rate, their loss would have been reasonable if they decided to stop work, and if also they found it looked sufficiently good to be worth going fully into, then such a capital should have been put down as would have given the whole affair a full and fair trial, so as not to be entirely dependent on every week's work, as has generally been the case here, even with mines which have been kept manfully on by just a few friends working together in hope that fortune would send them a rich shoot of gold, or the solid lode of copper ore, but who at last have to give up just when they ought to go on. At least nine mines (?) out of 10 never had a shaft sunk more than 20 ft.; and, also, wherever "working miners" have clubbed together, and taken up abandoned claims, in three cases out of four they have done well—and in some cases more than well. In short, if only one-tenth of the subscribed capital had been spent by the 1200 companies formed here during the mania in really opening up the ground first there would have been now at least 100 of them in profitable working order—for the gold, the silver, the copper, the antimony, the tin, the cobalt, the coal, the kerosene shale, the iron, &c., are there safe enough, and which want fair and full mining treatment to be properly developed.

Another reason of failure was that during our mania the visiting even of the nearest mine meant a long coach journey to the district, then horse (or foot) work to the mine, scant accommodation, and, generally speaking, such a rough and tumble journey as few cared to undertake; irrespective of which the directors and principal investors were men of business in Sydney—which means in three cases out of four to be a ship agent, consignment agent, importer, exporter, director of insurance, bank, and other public companies, all rolled into one; and, therefore, such men could scarcely get away if they wished, and had to trust to reports of managers, whilst the smaller fry of shopkeepers add professional men, clubs, and other investors felt sure their interest must be safe in the hands of the great Mr. A. or B., who had not only invested their own money, but whose well-known shrewdness, &c.

Since the bubble burst our three main lines of railway have pierced through the mountain chain, and got into the heart of our mining country; good roads have also been opened up to the claims themselves, and there will be no chance in the future for lazy miners, scheming managers, or scoundrelly prospectors ("of a big reef which only wants capital") being able to escape the keen oversight of shareholders, made suspicious by easy, quiet, and comfortable travelling to drop down on them suddenly, and see for themselves how things really are going.

With the exception of Hill End on the west, and Adelong on the south-west (where there are a few deep shafts for quartz mining), we have literally only scratched at our mineral deposits, and as there is one known mineral belt of country, over 70 miles broad, and over 700 miles long, besides various other isolated districts, there is plenty of work ahead of us for generations to come.

As respects our system (?) of gold working, out of at least 1000 companies which commenced operations not more than 10 per cent. ever went below 20 ft., not more than 5 per cent. went over 100 ft., and only about 1 per cent.—or, say roundly, a dozen in all—kept steadily to work, and of these more than half are now dividend paying, and the deeper they get the steadier the reef runs; whilst of some that did go to a decent depth a little delay in getting good stone caused work to be knocked off.

The history of the New Tunkey Consols is a fair sample of an honestly conducted mine, and how it stopped. The reef was, and is, about 3 ft. thick, well defined, and running like a backbone to a sloping spur, at the foot of which good alluvial diggings had been worked. It was opened by six working miners, who sunk down 160 ft., took out 120 tons of stone, averaging 5 ozs. per ton (this was proved by the crushing-mill books and the bank receipts), and left standing in the hanging-wall from 1 ft. to 18 in. of stone, said to be equal to at least ½ oz. per ton. They could not agree among themselves as to putting up machinery (the mill being 8 miles away over execrable roads), and they sold out to a Sydney firm for 3000*l.* cash; another 4000*l.* was then spent in machinery, huts, tools, &c., sinking a new underlie shaft, and some hundreds of tons of quartz raised. The highest crushing was 15 dwts. per ton, and the lowest 4 dwts., and the average cost from first to last about 25s. per ton, and, as the gold was worth 4*l.* 1s. 10d. per oz., it nearly paid expenses (and progressive works beside); but the crisis came, cash for calls was scarce, and so the affair was wound-up, the plant sold for a few hundreds and removed, and the mine now abandoned, with three shafts down (one 300 ft.), and every indication of better stone, as the stone was full of dark stripes, galena, and small shotty gold here and there to be seen. Had a tunnel been driven in to cross-cut the lode from the Creek level, which would have cost about 1000*l.*, there would have been 500 ft. worked for stoping, and the total cost of working been reduced to 13s. per ton, besides which a sister reef, about 50 ft. off, would also have been tapped, and every chance likewise of again striking the rich shoot, which the original owners had picked out as far as they could trace it.

I mention this mine so fully because it is a good sample of how unduly shareholders became depressed directly the reaction of the fever set in, and also because it was honestly and honourably worked from first to last so far as the directors and shareholders were concerned, as there were no paid-up shares; all were alike as to calls, and all personally known to each other, and the manager also efficient and steady. In Victoria, or even California, such a reef would have paid good dividends, and would certainly have been proved at least down to the water-level before being finally thrown up.

As regards crushing we have never reached the perfection of our Victorian neighbours in the art of saving the gold, whilst as to pyrites or mundic it has never been treated at all here in anything approaching a scientific method, and I might say never even attempted to be, and there are thousands of tons of tailings in the colony now which ought to pay well for concentrating the pyrites, and then extracting the gold known to be in them. Pyrites generally comes in strong directly the water level is reached, and is also the sign with us for stopping work, just exactly where it ought to go on, and to reap its reward for the getting down to what is really the richest material if properly treated. There is a lode at Major's Creek, over 30 ft. thick, the worst of which assays over 1 oz. per ton, and plenty of it several ounces. The free gold in the upper portion of the reef gives a little fortune to each of the miners; but they struck work directly the pyrites came in, and then this enormous deposit lies idle, waiting for a scientific man with 2000*l.* or 3000*l.* at the most to step in and clear his tens of thousands.

In the same district is a lode of blended copper, gold, and silver, but this a miner would not touch with a pitchfork, much less with a pickaxe, and then that also lies idle, as a striking example of the ignorance of real mining and apathy about it in New South Wales.

Hydraulic mining for alluvial gold, which gives such great returns in California, is only a name amongst us, and not one man in a score ever heard of it; and as for cutting a water-race for 10 miles, much less 50 miles—no matter how rich the ground to be sluiced might be—any man who proposed such a scheme in Sydney would be looked on as a lunatic, and even amongst the miners themselves as a very visionary enthusiast, "who didn't know how to keep his money after he had made it, if he meant to risk it in that way." One or two enterprising men have really brought water a few miles, and done splendidly by it, and there are two companies now engaged in bringing it over 15 miles; but shareholders pay up calls very slowly, and yet there are literally miles upon miles of ground, and in different districts too, which are known to be full of leaders and good patches of wash-dirt, which would pay 1000 per cent. on any possible outlay they could reasonably require, and there they are likely to be idle till either Yankee or Victorian enterprise comes and shows us the way.

Notably of all, perhaps, is the Major's Creek district, where there are at least 5000 acres, in which sink where you will you get a good prospect at least, and in many places from 5 to 15 dwts. per load; and yet because it will cost about 25,000*l.*—or say, at the outside of all risks, 40,000*l.*—to bring a sufficient body of water to sluice it fully and fairly the block lies idle, although it is no exaggeration to say there could and would be a return of thousands for every hundred spent.

[*To be continued.*]

MINING IN SOUTH AUSTRALIA.

SIR,—I enclose a copy of the concluding debate on the Report of the Select Committee on the Northern Mineral Leases, and would direct especial attention to the speech of Mr. John Richards, M.P., a practical common-sense man. He thoroughly exposes the absurdities committed by the committee. The most obnoxious paragraphs were expunged from the report, amongst which was that reflecting on the account of our northern copper mines, as given in the Government Handbook, edited by Mr. Harcus. In a few months I hope I shall be able to give you stronger testimony than ever as to the mineral wealth of the country beyond Port Augusta. There has been a recent discovery, about 25 miles from the proposed northern terminus of the Port Augusta Railway, and one which, from the description given by Capt. Mathews, a practical and thoroughly competent man, and from the samples of ore which I have seen appears to be very rich. Capt. Mathews also discovered a rich lode of silver-lead in another locality. The present year has been very dry, and consequently very unfavourable for the prosecution of mineral discovery in the North. The low price of copper, also, has had a very depressing effect on the mining industry.

The Moonta Mine never looked better than now; yet a month ago shares could be bought at 15*l.* Now the news has come of the rise in copper, shares have gone up to 17*l.* 12s. 6d. The Kurilla Mine is going on very well, and its future success is a matter of certainty. The old Yelta, the Devon Consols, and the Wallaroo Mines are all in a satisfactory state, and if the price of copper keeps above 80*l.* the production of copper will progress. An old and experienced miner remarked to me a few days ago that the Burra was just beginning to be a mine. The works now being carried on bid fair to develope something very good before long. It is not unlikely by next mail I may be able to send you news of an important discovery at the greatest depth yet reached in that mine.

In gold mining we are not making very great progress, but the Waukaringa district is decidedly improving, also the old Echunga district, and good returns are being washed from the sands of the Onkaparinga river. As our colony generally progresses I am sure we shall progress greatly in our mineral development.

Adelaide, Nov. 4 RESIDENT.

PORT PHILLIP GOLD MINING COMPANY.

SIR,—The news from this mine brought by the last two mails is most satisfactory, and the telegrams recently to hand are still more so. About two months ago I bought a large lot of the shares, and just lately I have purchased more, but am unable to get them delivered, although they have been bought in against the seller.

There is sufficient money in hand to pay a dividend next February. I would, therefore, strongly recommend my fellow-shareholders to increase their venture as far as possible at the present low prices. When the company re-enters the Dividend List a rise is certain.

SHAREHOLDER.

COAL AND IRON MASTERS, AND THEIR OPERATIVES.

SIR,—Your leader on this head, in last week's Journal, is well timed, and it is a pity that it will be read by so small a portion of those who are chiefly the sufferers by neglect of the plain laws which regulate work and wages—the law of supply and demand. Perhaps there is not any branch of trade in which the wages of operatives fluctuate so much as in coal and iron mining, and this fluctuation will continue so long as the present system of payment for transit prevails. Supply and demand are the great levers for raising or depressing the price of any article or product, and for raising or depressing the rate of wages. But they have a curious effect on mining and miners' wages. Few people will dispute this proposition in the present state of the mining trade, because from 50 to 60 per cent. of the charges on coal are not affected by any rise or fall. For example, the price of coal in the London market advances (say) 4s. a ton; well, the railway dues are a fixed quantity, regulated by Parliament, the rent or royalty is also fixed, the deduction for redemption of capital is the same, the capital is the same, so that really all, or very nearly all, the 4s. of advance is 4s. of an advance on the coal at the pit's mouth, and if the men worked without an advance of wages then the coalowner would have very nearly 4s. per ton of extra profit.

Before the time of railways these fluctuations in price or profit were not so great, because collieries only supplied a small district around them, and when there was shipping, as to London, why freights rose, and the shipowner got a part of the advance, and so the prices never rose so high at the pit's mouth. But the railway gets no benefit; nay, we had the extraordinary spectacle during the last "high prices" of railway dividends going down to nothing almost, while they were carrying more coals than ever, because they had to pay their workmen higher wages, they had to pay the very highest rates for coal, and also higher rates for furnishings, while they could not raise their rates to anything like a commensurate degree, and the working charges went far beyond the regulation 48 per cent. If this statement be correct, then the effect of the railway legislation has been to divide the lion's share of the spoil between the coalowner and his men. I say between the coalowner and his men, because if the owner does get a rise of this kind he wants more men, he offers more money; the supply of men is not equal to the demand, and wages advance. Like causes produce like effects, and I see no reason to doubt that we will have prices of coals up as before, and men's wages up as before, and it would, indeed, be a great problem solved if we could equitably divide the share of the spoil between the two parties—the master and his workmen. Conciliation boards will not do it. Arbitration fails every day, because in nine cases out of ten the arbitrators do not agree, and the umpire has to settle it the best way he can, and clearly that is not arbitration; it is often a halving of differences, or where otherwise is often absurd. For, after all, is it free trade when a man chooses to depute to a third man what rate he shall pay for his goods, or what he shall receive for his goods or his labour?

In my opinion the extra wages paid to every workman during the "high times" would amount from 150*l.* to 200*l.* per man. I do not think this was more than their share of the spoil, indeed, from what I know of the trade, they might have had a little more; but only fancy, if they had taken care of this what a benefit it would have been to them. I do not mean that it would have made them independent, but what a help it would have been to them in their old age. I have great hopes that education will enable them to comprehend their position, and will lead them, instead of listening to blatant demagogues and Union leaders to trust to themselves. They will then understand how that in good times supply and demand will ensure for them the highest wages, and that in bad times their leaders cannot prevent them from falling, and they will also see that rather more than a fair proportion falls to them and the coalowners. Could some safe investment for their savings not be devised? They cannot be capitalists, but could they not put their savings in safe investments? They tried co-operative collieries, so did the general public, but these did not do, nor will they do. Some of the leaders are become coalmasters, but then they had become capitalists—the working miner has no such chance. Try, then, Mr. Editor, and find out if there is anything in which, in the coming struggle, you think they should do with their savings.

AN ENQUIRER.

THE BAROMETER AS AN INDICATOR OF GAS IN COLLIERIES.

The barometer has always been considered a valuable instrument for assisting to indicate when gas may be found, or expected to be found, in the workings at the edge of extensive goafs, and in the returns from districts where goafs or gobs have been formed of any extent. When the barometer is very low, no matter where the wind may be increased, quantities of gas will be given off from those points indicated. It has also been held that increased quantities of gas are given off from the whole coal faces when the barometer is very low, and this, we believe, will prove a correct view. We have before us a book containing readings of the barometer from May, 1860, up to the present day, and in the same page remarks on the state of the returns and workings in a mine; these fully bear out what we have stated. In a whole mine with a powerful ventilation it is quite possible that little change may be noticed by a merely practical miner without scientific knowledge, as many deputies and such-like men are. It is remarkable that the barometer is seldom to be found at a very low point, and we only give the lowest readings for 16 years. We have discarded most figures at and above 29·0, and it will be seen at a glance that the lowest barometers occur in November, December and January; it will be curious to note what percentage of explosions have occurred in these months. There is little doubt that the two last and the two first months of the year are the most trying for working collieries, but it does not follow that all the explosions will occur in those months.

There is no doubt that the wind has considerable influence on the state of the mines; it is well known that in Durham the south-east wind is the worst, but the barometer generally changes with the wind. If you have a soft south-east wind you are not likely to have a high barometer. If the barometer remains steady at any one point, and the air currents are sufficient to ventilate the mine, it will be in a good state; but if a sudden and great fall takes place in the barometer, and the mine is extensive with large goaves, the quantity of gas given out by these goaves will be largely increased, that actually occurs—invariably in the writer's experience. The subjoined table shows some of the lowest barometer readings during the past sixteen years:—

BAROMETER READINGS AT SEA LEVEL.

1860—May 8	29·15	1869—Feb. 1	28·59
Aug. 25	29·51	Dec. 13	28·61
Nov. 15	29·00	1870—Jan. 8	28·49
1861—Feb. 6	29·02	Aug. 10	28·85
Nov. 2	29·21	Oct. 23	28·86
Dec. 7	28·99	Nov. 23	28·93
1862—May 13	28·91	1871—Jan. 17	28·60
Oct. 20	28·72	Feb. 5	29·31
1863—Jan. 19	28·93	Oct. 2	29·02
Sept. 22	28·68	Dec. 29	29·26
1864—Aug. 7	29·86	1872—Jan. 24	28·45
Sept. 29	29·13	Feb. 27	28·97
Oct. 20	28·68	March 26	28·86
Nov. 14	28·54	Nov. 2	29·25
Nov. 26	28·54	Dec. 9	28·85
1865—Jan. 14	28·22	1873—Jan. 21	28·75
Jan. 16	28·57	Feb. 11	29·10
Nov. 19	29·66	Nov. 1	29·03
Nov. 22	28·52	1874—Jan. 25	29·20
1866—Jan. 8	28·47	Feb. 27	29·05
Nov. 16	29·14	April 3	29·15
Dec. 14	29·02	Nov. 29	29·10
1867—Jan. 8	28·41	1875—Jan. 24	29·13
Feb. 6	28·36	Sept. 27	29·00
Dec. 1	28·73	Nov. 14	28·86
1868—Feb. 1	28·71	1876—Feb. 20	28·98
April 20	28·73	March 10	28·90
Nov. 23	28·73	Dec. 2	29·16
Dec. 24	28·45	Dec. 4	28·73
1869—Jan. 29	28·55		

In all those cases given above, when the barometer was *very* low, the quantities of gas given off was largely increased, and in all cases when a rapid and considerable fall took place the same remark applies. Mr. Bunning's Tables for 1873 show 39 cases of fatal explosion, of those 23 occurred with a barometer comparatively low, and 16 with a high barometer. The great majority of these explosions occurred with a *falling* barometer, and we only notice one that has occurred with a rising barometer.

The following are the readings of the barometer for four days of 1876:—

Dec. 3	29·05	Dec. 5	28·77
Dec. 4	28·73	Dec. 6	28·73

being the lowest barometer readings for four successive days that have occurred during the past 16 years.

It will be seen that the lowest barometer reading, 28·22, was on Jan. 14, 1865, and the next lowest occurred at 5 A.M. on Dec. 4 this year, when it was 28·73. There is no doubt, as Mr. Maddison remarks, that the gas in the goaves, &c., moves before the mercury, and for this reason some managers have erected a water barometer at the bottom of the shaft, which has a long range, and is much more sensitive than the mercurial barometer.

Mr. Wilson's remarks that in a hot pit and the thermometer high they had less gas, and immediately after increasing the current of air and thus reducing the temperature they had more gas, sound paradoxical. Perhaps in the hot pit, with too little ventilation, the gas would not be seen so plainly owing to the want of a sufficient supply of oxygen, and when this was supplied the gas would be seen more plainly; the gas could hardly be increased in quantity.

Mr. Bunning published a paper in the Transactions of the Northern Institute of Mining Engineers on this subject. He gives the barometrical readings for 1873, the direction of the wind, &c., and the explosions. It cannot be expected that such accounts for one year can throw much light on so intricate a question, but we are inclined to think that so far as they go they coincide with our experience.

Gateshead, Dec. 12. A. R.

THE ARSENIC TRADE.

SIR,—*Apropos* of the remarks by "Observer," on the question of the sale of the Devon Consols arsenic, the discussion of which is now transferred to the more extensive field of the *Mining Journal*, the following additional particulars gathered from the correspondence in the local papers and from general rumour may, perhaps, be read with some degree of interest.

The quantity of refined arsenic manufactured by the Devon Consols Company is generally understood to be from one-half to three-fourths of the whole production of the kingdom, and in the market their brand would seem to have taken the highest stand. In Cornwall there are refiners of arsenic, that is to say, companies formed to purchase from the different mines the crude arsenic or soot obtained by a simple process of roasting from the arseenical mundic, which soot so purchased after going through the usual refining process is barrelled and sent to market. It appears that some of the refiners having a desire to become purchasers of the Devon Consols refined arsenic formed a resolution to tender for it, and with this object in view they modestly stipulated that they, or someone deputed by them, should be present to examine the different tenders when opened, by which means they sought to place themselves in a position to have the opportunity of periodically ascertaining the offers made for the best article in the market; the chief channels through which the best brands pass; enabling them, with other information, to regulate their own private sales, which would thereby be fully revealed. To make their position still stronger, it is reported that they made themselves shareholders (which, since the subdivision of the shares, requires only the outlay of a few pounds), and that by virtue of this holding they claim to have a full disclosure of the whole of the information they require.

The directors, according to the report of the last half-yearly meeting, have withstood this process of intimidation, and it is wondered

at, in the West, that the company have not further strengthened the hands of the directors by a special resolution investing them with full and absolute power to dispose of the arsenic to the best of their judgment for the benefit of the company, and that no shareholder (whether interested in the trade or otherwise) be permitted to demand more information than the directors in the exercise of their discretion, and for the protection of the company, may deem it expedient to furnish.

If sale by tender be the more preferable mode, it seems somewhat strange that the refiners themselves do not dispose of their own arsenic in that particular way, or by public ticketing, as has been suggested by some correspondents who are unable or who do not discriminate between the sales of crude arsenic and refined. It is a peculiarity worthy of note that shareholders interested in the trade should seek to gain a profit out of their fellow-shareholders instead of giving the company information as to where the best price may be obtained. If they sell in the highest market, why should not the Devon Consols arsenic go direct from the mines by the same road?

Managers of mines in the West of Cornwall have constantly to encounter the interference and cross-questionings of self-confident local merchants, who purchase a few shares in order to place themselves in a position to ascertain the prices of materials, the quantity of tin in stock, with other special objects, but this little local inquisition seems to be quite outdone by the manœuvres of the arsenic refiners.

Dec. 19. INDEX.

THE ARSENIC TRADE.

TO THE EDITOR OF THE WEST BRITON.

SIR,—I think Mr. Field's statements at the annual meeting of the Devon Great Consols adventurers call for considerable correction. He is reported to have said, "if he had the contract for Devon Great Consols arsenic he would command four-fifths of the entire make of white powdered arsenic." Now, if the following is a correct estimate of the make of arsenic, one-third of the make would be nearer the mark:—

	Tons per month.
Devon Great Consols	150
Cornwall Arsenic Company	100
English Arsenic Company	60
Falmouth Chemical Company	100
Greenhill Company	100
Coombe Company	60
Ley	30
New Consols	50
Parnall and Hall	40
Vivian and Sons	60=750

Mr. Field is also as wide of the mark in the price, or nearly so, as in the make; as is well known to all makers of arsenic, it is not very considerably over half the sum named, f.o.b.

In the interests of the shareholders of the Devon Great Consols the directors are right not to have open tenders. Were they to do so, what is to prevent the western makers from combining, and placing the price of the unrefined article so low that they might make and sell much below the price given by the contractors for Devon Great Consols arsenic, yet without any loss, but still actual gain to themselves. It must be borne in mind that the western makers occupy a far better position than the eastern makers (Devon Consols excepted), because they (the western makers) can regulate the price they give for the unrefined by the price they obtain for the refined; whereas the eastern makers, unless they can command a certain price for their manufactured article, must either cease working or produce it at a loss, as their mines cannot produce their pyrites below a certain price.

The Messrs. Drayton are the best friends the arsenic trade has had for many years, and if the trade generally imitated them it would be soon in a more satisfactory position.

The production of arsenic at present, though apparently large, is not in excess of the country's demands; and this is a fact beyond all others that should be borne in mind by the producers of arsenic, that the country will not buy a single ton of arsenic more than it requires for its consumption, though you might offer it at 5*l.* per ton; but it will secure what it does require, even if it has to pay 17*l.* per ton, and it will not materially affect the price of the articles of which it is made to form a part.

There is hardly another trade you can mention that you can so easily commend to benefit all parties; and as arsenic forms a considerable item in the assets of a large number of our mines that are contending manfully with the very low price of metals, I think the most sensible course for the manufacturers of arsenic to pursue is not to stand at a distance snarling at each other, but mutually strive to improve their position, and while doing so they will have the satisfaction of knowing they are helping to sustain the mining interest of the two counties.

ONE WHO HAS AN INTEREST IN BOTH.

DRAKEWALLS MINE, AND IMPROVED STAMPS.

TO THE EDITOR OF THE WEST BRITON.

SIR,—I notice a paragraph in the mining intelligence of Monday's edition of the West Briton of the 4th inst., wherein your correspondent, referring to the Drakewalls Mine, says all the machinery in the mine is worked economically, and was erected at a heavy first cost, and does not need many repairs. The head and lifter stamps is the best we have ever seen in our wanderings through the mines of the two counties, and crushes considerably more than the average of heards in 24 hours.

Now, Mr. Editor, I beg to say, for the edification of your correspondent, that about the end of the year 1865 I completed a large contract I had taken for the erection of steam-stamps, &c., in one of the largest mines in Cornwall, and, being highly complimented for the excellence of the erections of the same by no less authorities than Mr. Warington Smyth, Chief Mineral Inspector for the Crown, Mr. Charles Fox, Falmouth, and many other eminent gentlemen in mining matters, I then returned to my residence, being fully convinced that an improvement could be effected to the extent of 50 per cent. in both the duty upon the stamps and labour cost saved upon the first course of dressing-floors in connection with the same.

Being privileged with a contract in the latter part of the year 1873 to erect 100 heads of stamps and first course of dressing-floors at the Drakewalls Mine, in the early part of 1874 I completed 56 heads and dressing-floors in connection with the same, which proved at once that these 56 heads were quite capable of doing the average duty of 100 heads taken from any 10 of the principal tin mines of Devon and Cornwall put together, with the 50 per cent. saved upon the labour cost on the first course of dressing-floors referred to above. This has been proved beyond demonstration at the said Drakewalls Mines, which your correspondent so highly speaks of.

As a further proof of the illustration of your correspondent's opinion, I give the following:—Shortly after the setting of the stamps and dressing-floors to work, the excellency of the same reached the Mercury office, at Plymouth, from whence they dispatched one of their reporters to the scene of action to see and examine for themselves. This, I think, was in June, 1874, and to confirm your correspondent's opinion, I beg leave to take a few extracts from their report, which I have now before me. "The new surface works will be of the most complete and substantial character. For some time past 56 heads of stamps have been doing good work. They are constructed on new and approved principles by Mr. Searle, of Sticker, near St. Austell, and by their arrangement are capable of doing as much work in a given time as 100 stamp-heads fixed in the ordinary way. The buddles are immediately in front of the stamps, and here, by the application of ingenious contrivances, wheelbarrows are entirely dispensed with. The advantages are so manifest that they are sure to be brought largely into use in our Cornish mines."

Notwithstanding all these advantages gained, I am fully persuaded there is still great room for improvement in these matters yet, and I am quite prepared to contract with any mining company to carry the same into effect at the shortest notice, or if desirable to erect a ten times better stamps than anything of the kind ever coming under my notice in this country yet.

Every pattern for every piece of casting that principally comprise the entire structure of the stamps at Drake Walls Mine was either made by me under up superintendence or by my direction, save the axles alone, which are partly second-hand; the others belonged to the mine before the present company took the same.

In reference to the wear and tear of the stamps, I had the superintendence of the same from the time they were set to work until the expiration of my contract, which was near twelve months. During that time there was not one bolt required in the entire structure, save the lining plates of the coffer themselves, nor even the tinkle of a washer to be heard throughout the entire machine; it was so constructed and kept that any gentleman could walk in behind the entire structure and survey the whole affair at his leisure while in working order, as I have repeatedly seen done, and come out again without even a speck of dirt upon his clothes, and if properly looked after and kept since I left I will venture to assert that they have not averaged five bolts a-year for the past year and a-half since the expiration of my contract, so that they need but little repairs, as your correspondent stated, if properly treated, even for years to come.

Anything appearing at any time in reference to the above in your valuable columns shall receive my best and prompt attention.

Sticker, St. Austell, Dec. 11. SAMUEL SEARLE.

THE ORIGIN OF METALS—MESSRS. F. W. MANSELL AND CO.

SIR,—To be told by an authority like Mr. J. A. Morgan, F.G.S., that "good service is being done to the cause of science by the able letters of Messrs. F. W. Mansell and Co." may be flattering to those gentlemen, but the readers of the *Mining Journal* were promised that in its columns would appear "information gained upon the spot that would be useful to shareholders in the leading American mines." As far as I have seen—and I have each week carefully scanned the Journal—this information has not been given. Messrs. Mansell's province, one would imagine, was to do "good service" to shareholders rather than "to science." As Messrs. Mansell were engaged "three months inspecting the representative mines on the Pacific Coast," which, of course, included Richmond and Eberhardt, "good service" would be done by giving the result to your readers. These two are the only American mines in which I hold an interest, but there are others claiming equal publicity at the hands of those who have had the exceptional advantage of a personal visit to these properties.

A large amount of English capital has been expended in American mines, but it is a remarkable fact that until now disinterested and independent testimony were unattainable by shareholders at home. The "good service" can now be done by Messrs. Mansell, but will they do it?—*Dec.* 19. INVESTOR.

MINING INSTITUTE OF CORNWALL.

SIR,—The miners of Cornwall, who in late years have been awakened to perceive the importance of a higher degree of knowledge than their forefathers possessed, have added to the previous useful institutions the Mining Institute of Cornwall. It is not intended to supersede, or in any way to interfere with, or to diminish, the usefulness of the Cornwall Mining School, or the Cornwall Polytechnic Society, but is supplementary to them. The Mining School is a scientific educational establishment, and the Polytechnic is an annual exhibition society, but the Institute of Cornwall is for the discussion of subjects introduced by the reading of short papers on mining subjects, of which notice will be given to every member by the secretary. The number of members already reach to 84, which, considering the recency of the formation of the society, shows a very remarkable success, and the high appreciation entertained by the miners of the object in view.

The inauguration meeting was held yesterday, at Capt. Rogers's hotel, in Camborne, presided over by the President elect, Dr. Foster, the Government Mineral Surveyor. There was a good dinner, after which several loyal, patriotic, and appropriate toasts were given, and suitably responded to. There were present Mr. Basset, of Tehidy, who has kindly patronised the proceedings from the first; his legal agent, Mr. P. P. Smith; his land agent, Mr. Bolden; two clergymen, several engineers, mine agents, and others, in all about fifty. The meeting was an extremely pleasant one, and there was an apparent determination to make the Institution an instrument of good by the interchange of ideas on mining matters.

There is one subject of considerable importance to mining companies, which I hope to be permitted to bring under early discussion—it is that of "Mining Leases," of which you shall be advised in due course.—*Truro, Dec.* 19. R. SYMONS.

WEST GODOLPHIN.

SIR,—Holding some shares in this mine I duly received from the secretary a statement of accounts and report, which must be very satisfactory to the proprietors, as it not only gives a balance on the right side but a considerable improvement in the mine, with every prospect of that improvement increasing, and as an evidence of which I find they have sold, Nov. 30 and Dec. 2, 22 tons 17 cwts. of tin. This is a considerable increase on the output. The shares in this mine must be well held, as I scarcely ever see one advertised for sale. I have no doubt but this mine will ultimately turn out a great success.—*Belfast, Dec.* 18. AN IRISH SHAREHOLDER.

TANKERVILLE MINING COMPANY.

SIR,—There is a saying, "First catch your hare, then cook him." "An Old Shareholder" should first have proved beyond all doubt that the auditors of the above company had neglected their duty, and then it would have been time to have asked whether they were "liable to punishment." For my part I cannot see that "An Old Shareholder" has any just cause of complaint against the auditors of the Tankerville Company at all. The balance-sheet is not the balance-sheet of the auditors but of the directors, and his complaints against that document have been fairly answered by "Another Old Shareholder" in the Journal of last week. How much better would it have been for your correspondent to have gone in the first instance to the office of the company for explanation and information than to your pages with unwarranted complaints. "An Old Shareholder" appears to be quite unacquainted with an auditor's duties. As defined by the framers of the Act brought before Parliament this year to amend the Companies Acts, 1862 and 1867, they are as follows:—To examine the balance-sheet and statement of profit and loss. To compare the same with the books and accounts, the vouchers, and stock accounts, and the bankers' and other balances. They are also to examine the schedule of the assets and liabilities, and, having so done, to certify that such balance-sheet and statements are, to the best of their knowledge and belief, correct. Now, as "An Old Shareholder" has not shown that the Tankerville auditors have neglected their duties in the above particulars, while his complaints, really against the management, were such as admitted of explanation, why did he not at least wait for a verdict from those he appealed to before prejudging his own case and talking about liability to punishment? Passing from "An Old Shareholder's" letter to that from a professional brother in the North Country, there appears to be a point or so there touching the audited accounts under consideration that may need a passing observation. Alluding to these he says—"That they are misleading is clear, still not strictly incorrect when dates are examined and considered." How misleading? If the date of the last sale of ore included in the accounts had been kept back, or if the time the costs are brought up to on the other side had been suppressed, then they might have been misleading, but seeing these facts are stated proves conclusively that on the part of the management there was no disguise, or any attempt to mislead in any way whatever. As to the form in which the balance-sheet is rendered, there can be nothing misleading in that. It is, in my opinion—and I have had some experience in companies' accounts—as clear in its construction as any mining balance-sheet I have ever met with; so much so that I have reason to know it has been taken as a model by other companies.

"A North Country Auditor" seems to think it important to know whether the balance-sheet was signed by the directors before or after the audit. Admitting that all balance-sheets before they are published should be signed by the directors (or secretary by order of the board) as well as by the auditors, it cannot surely affect the facts and figures in the sheet to know who were the first to attach their signature. I wonder if there would have been any complaints about the accounts at all if the shares of late had gone up instead of down. The present balance-sheet is like all other balance-sheets issued since the company commenced. If they have been all along so faulty as to render the auditors who passed them "liable to punishment" it does not say much for the sagacity of the shareholders, who at numerous meetings unanimously passed them. Your correspondent only complains now, although he is "An Old Shareholder." A LONDON AUDITOR.

NORTH LAXEY MINE.

SIR,—I trust the directors will not be influenced by "F. S.'s" letter, which appears in last week's Journal, and discontinue the sinking of the shaft. Mr. Rowe's last report states that the sump which "F. S." says is worth 2 tons per fathom is in a hard bar of ground, and that there is better ore ground further north. I think, therefore, that it is folly to continue sinking the winze or sump as "F. S." suggests, but rather to push the sinking of the 136 shaft with all speed; this is much more likely to lead to results, which will prove to the advantage of those who have stuck to the mine than driving the 136 to a bunch of ore, which appears already to be cut out or thereabouts in the winze sinking below the 121. Mr. Rowe states in his last report that he hopes and expects shortly to report an improvement in the shaft sinking below the 136, and if his anticipations are realised, and the shaft become valuable to the extent of 2 tons per fathom, the shares would soon be quadrupled in price, whereas if "F. S.'s" advice be followed, and the 136 driven through 20 fathoms of unproductive ground, all the available capital would be expended, and who would in that case be likely to subscribe for more in order to sink the shaft? I subscribed for further capital solely because I believed the shaft would be sunk, and not to fritter it away in driving levels at the present depth, which have hitherto ended in nothing but disappointment. Mr. Rowe has stated over and over again that depth was all that was wanted, in his opinion, in order to secure a paying mine. My advice is, therefore, to spend every farthing of the capital in sinking the shaft, and to give up every other point which is not remunerative in order to husband the capital for this purpose. There ought to be sufficient to sink the shaft at least 20 to 30 fathoms deeper, and if nothing is met with when that depth is reached I, for one, should say that Mr. Rowe has been too sanguine, and that the mine is not worth prosecuting further. The general meeting will be held, I suppose, in three or four months, and till then let the sinking proceed, and if nothing good be met with then let the shareholders decide what should be done. A HOLDER OF 200 SHARES.

P.S.—Perhaps Mr. Rowe will state what the value of the north level in the 136 is worth, and how many fathoms it would have to be driven before coming under the winze sinking in the 121.

[For remainder of Original Correspondence, see to-day's Journal.]

THE WILD DUCK, OR SPORTSMAN'S ARMS.

"Well," says Old Tom, "I'm first scholar to-day, but here is Jimmey Dowa." "Iss sure" says Jimmey, "and how's the boy Jacky?" "I'll tell the you, in a couple of days after putting the blister to his nuddick a could chow and clunk so well as ever, and the man that invented blisters ought to have a tombstone put up to his memory. The denner, sose, won't be ready for a bit, and I'll tell ee how Jan S—— shut a 'cunder'd hole.'" "Jan and Tom B—— wos comrades for years—old sumpmen—it wos Gwinear feast, and Jan and Tom wos rather seedy the feasten Monday, and fust core too, so when the come to bul in the morning, old Tommy, the pitman, see'd how the wor, and told them to go and cure themselves, for the wor no good underground. So away went Jan and Tom glad enuff to the Cornish Mount—Breppar; the wor a long time before the could quinch their thirst, but the time passed away so pleasant like, and the spent so much ground in telling about it that the core was up before the knowed where the wor, and then it was how should the plan to deceive the women. At last it was agreed that Tom should tell his wife he was knacked up after such a hard core, and Jan was to tell his wife how the wor hindered with a ugly cross cundere'd hole." Tom got on very well, but Jan's wife, Betty, wanted to know more particulars about the cunder'd hole. "Well now," says Jan, "the thing Betty is like this here, the ground in both ends of the shaft will tear very well, but in the middle there is a ugly tough cross-grained knatty piece of ground, and till we got un out by cunder'd holes; it was only throwing away money to be burning powder in the end of the shaft." "Dear me," says Betty, "I should dearly love to see a cunder'd hole." "Well," says Jan, "our kitchen floors is full of banks and pits, and if you'll lend tools I'll soon show ee a cunder'd hole. Jan soon bored the hole. "Dry sand will do for tamping, Betty, but get the goose-wing, for I must make a littlerod of quill. At last the hole was tamped up. A short snoff will do, says Jan. "So look sharp, Betty, fire." They ran outside, and after a bit, off went the hole, "Oh, what a noise," said Betty. "That's the trade faalen" says Jan, "and look here Betty, when you hear a hole go off purty and plum like, with a busten reppen sound, you may depend your life upon nn, but when a go off with a rattle you may be sure he blowed the tamping, but les us go in, the smoke must be gone." "Look here, Betty," says Jan, "a ess a beauty, I knowed it by the sound, and a tore 3 in. clean under the bottom, and now you see Betty that the ugly knatt of ground is gone, a hole in the east and west ends of the shaft will rep all the length." "Oh lor, oh lor," screeched Betty, like a mazed woman, "I am ruined, look, my beautiful dresser, every bit of clome is scat in pieces." Jan it seems had planned his hole to them, right into Betty's dresser, and so long as Betty lived, whether Jan was late or early, she never axed any more questions about cunder'd holes. "Now that's ov'r, old Tom," says Jimmey Dowa and Peter Luke, who had come in with Jan Temby, just as old Tom begun his story, remarked that Betty's dresser was actually scat in pieces with Jan's cunder'd hole. Denner was then on the table, and Peter Lukey was made so welcome as a prince. When all was cleared away and pipes lighted, there was a long discourse about lodes and cross-courses, &c.

"I have been thinking," says Cousin Will, "since our last meeting a good deal about tracing up and paying more attention to parallel cross-courses; for if there is anything in the idea of 'ore against ore,' I think there is a vast deal more importance to be attached to a careful examination of cross-courses—the effects, good or bad, they have on lodes—and that a thorough knowledge of the subject would lead to profitable results." "Hear, hear," says Jan Temby, "I agree with ee, landlord; and I am sure if all the cross-courses between Dolcoath and Market Jew wor traced up there would be mines found in that there bit of ground between both channels to employ all the miners in Cornwall; and then there is another bit of ground from Dolcoath to the 'Four Burrows,' and between the two channels, where you would find mines that would give employment to the people for 100 generations." "Well, then," says Peter Luke, "as my friend Jan Temby has gone so far as Market Jew, suppose we draw a line from that ancient town to St. Ives, and then take in the bit of ground west of such line, to the Land's End, and I think you will find as rich mineral districts as in any part of the world." "I don't know," says Jan Sewell, "what in the world made the people so mazed as to go all over the world to look for bals when there is room enuff, lodes enuff, and mineral riches enuff in a little corner of Cornwall we have been taalken about to make the fortins of all the people in England; and, knowing this, the must be buffleheads, sure enuff, to throw away cargoes of money in furrin countries." "I tell ee," says Uncle Henry Treylon, "that this here state of things will be so, so long as people believe lies before truth; and from my experience, and that ess many long years, I believe with all our conceit that we are only just in the beginning of mining, and that we have a fine passle of things yet to learn; and I agree with Cousin Will that all the cross-cooses and lodes in the county should be costeened; there is no need to go abroad for good mines. Fools may do so if the've a mind to." "Hark to me, a minute," says Old Tom; "I've a plan in my head for dressing tin without one grain going away in the water." "If thee'rt able to do that," says Jemmy Dowa, "thy fortin is made, old fellow." "Well, praps I'll tell ee more about it next mittin." "That's right Old Tom," says

Cousin Will; "and, as we have a stranger here, I shall stand something handsome for 'goodwill.'"—*Cousin Jack's Unpublished MS.*

Meetings of Public Companies.

ST. JOHN DEL REY MINING COMPANY.

The half-yearly meeting of proprietors was held at the Cannon-street Hotel on Wednesday,

Mr. JOHN HOCKIN, the chairman, presiding.

The notice calling the meeting having been read, and the minutes of the last meeting having also been read and confirmed,

The CHAIRMAN said: Gentleman, as usual before proceeding to comment on the report and the operation of the half-year I will put the meeting in possession of the latest information as regards produce and profit. The produce for September, 30 days, as given in the report is 34,552 oits., the profit 6892*l.*; the produce for October 39,904 oits., the profit 8722*l.*; the produce for November, by telegram, 38,000 oits., the profit (not received) probably 8000*l.* We meet you to-day with not quite so favourable a result to report as on the two preceding occasions, but as we are able to recommend a dividend at the rate of 20 per cent. for the half-year we trust there will not be much disappointment felt, especially when it is explained, as it is in the report, that the sinking in the sump during the past half-year—which in other words means extracting an undue proportion of first-class ore, to the comparative exclusion of the poorer ores—has been only a little over one-half what it was in each of the two preceding half-years. Notwithstanding this, they hope, temporary diminution of present profits the directors are satisfied that the mode of working adopted during the half-year just passed has been the right one, and that continuing it for some months longer is the surest mode of getting into a permanent state of as regular and unvarying profit as can be expected from any mine. By retarding the sinking the force has been disposable, in the first part or the half-year, for clearing down the walls and properly securing them with suitable timber, and laterly, in addition to the timbering, for lowering and opening out the western part of the mine and bringing it into a more favourable condition for advantageously working the stopes. These, at the end of the half-year, were in a more favourable state than at the commencement, as may be seen by comparing the last sketch received (October) with the sketch for April, both of which are on the table. The large body of lode left standing east of the sump-shaft will have to be removed before it can be said that the mine is in a thoroughly advantageous state for economical working. This has been set about, and will shortly be got into a favourable condition for quarrying, but it will take some time before it can be carried down to a level with the sump. In regard to the state of the mine walls and timberwork, Mr. Gordon writes in a report received two days ago as follows:—

Mine Walls: Occasion was taken to refer very generally to the state of the excavation in the observations published with the directors' report, as laid before the stockholders in June at the annual meeting. It appeared to be a first and imperative duty to take steps for removing the large amount of killas, quartz, and poor mineral previously left standing against the wall of the mine. Had these poor excrescences of the lode been allowed to remain imperfectly and insecurely adhering to the mine walls the result would have been not only risky but dangerous to the mine force, if not to the continuance of mining operations. It was, therefore, resolved to stope down; this poor mineral and very insecure mixture from the mine walls. This would greatly increase the cost incured, for nearly the whole of the holes required to blast it away would have to be bored on temporary pole stages, to be erected and removed each corps by the miners. The work has been successfully accomplished, it is true at a very considerable cost of labour, and at a time when we could not well afford to apply it to the purpose. But we have the satisfaction of knowing, so far as can be seen, that we have removed this source of insecurity and danger from the mine walls. As regards raising mineral this was, of course, a great sacrifice. It was, however, a duty to do it.

Timberwork: This important part of the mine duty had not been kept up during the latter part of 1875, and the early part of 1876, partly in the first instance from not having a sufficient stock of large timber in that season for the purpose, and subsequently having all possible force concentrated on the raising and quarrying the best body of mineral and conveying it to the spalling floors. The inclines were very roughly constructed for the latter purpose, and the essential timberwork for the support of the mine walls fell into arrears. Nearly the whole of the arrears of this timberwork has been brought up as close as practicable, and there is reason to hope and trust that the mine duty in this respect has been well and adequately performed, and as regards the lode he remarks—

Mineral Lode: The best accessible part of the mineral lode had been extracted up to March this year, and since then we have been so much occupied in clearing away the inferior mineral left that there has not been opportunity to stope an equal proportion of the richer ore, and especially in the sump or eastern section of the lode. Lately we have commenced stoping more of this body of mineral, and also at the eastern end of the roof above, from whence a stope is being gradually quarried, which contains purer mineral than those portions we have been quarrying in the western division of the lode.

The quantity of mineral raised has been less during the half-year just passed (being the dry season, and this dry season has been a very favourable one, 9·60 in. of rain having fallen during the six months) than during the preceding half-year, though about 1200 tons more than was raised during the dry season of 1875, but the board hope that a larger force may ere long be attainable which will admit of a larger output. They have suggested means which they hope may tend to that result. It may not be uninteresting at this time to review the results obtained from the working of the mine since it has been re-opened. Now, it may be said, two years and a half ago, for though the lode had been reached six months earlier, comparatively little was done in the first six months of the year. During the above period we have sold gold to the amount of 514,356*l.*, and we have paid in dividends, including that to be now declared, 100 per cent. on the increased capital of the company. This, with other profits realised, carried to the reserved fund and undistributed, makes the total realised net profits for the same period 299,435*l.*, and which if all had been distributed would have been equal to a dividend of 47½ per cent. per annum during the period since the re-opening of the mine. The yield of gold per ton of mineral stamped for the three half-yearly periods, as given in the report, would seem at first sight to be gradually lessening. It is, however, in reality only an index pointing to the section of the mine from which the mineral operated on has been extracted, and the proportion from the richer or poorer sections. I have here before me a statement of all the assays made at the mines of the mineral from that part of the lode undisturbed by killas or quartz, since the same has been stamped separately, being the last four months of the half-year. The average of all these assays shows a gold contents of 14·514 oits. per ton, the highest being 16·648 per ton, and the lowest 11·554 oits. per ton. The assays of the general mineral—*i.e.*, the mixed mineral, ore, quartz, and killas, as taken from the poorer parts of the lode—give for the same period an average gold contents of 6·612 oits. per ton, the maximum being 9·156 oits. per ton, and the minimum 4·972 oits. per ton. It should also be borne in mind, when considering the yield of the mineral in the re-opened mine, compared with what it was formerly in the old mine, that since the mine has been re-opened the whole of the mineral raised has, with the exception of an inappreciable percentage used for other purposes, been stamped, whilst formerly as much as 43 per cent. had been rejected. During the past half-year, however, about 800 tons of poor mineral—about 2½ per cent. of the quantity raised—was placed on one side, and will be used in re-grinding the sand at the Praia. With regard to what is said in the report about the difference between the assays made at Morro Velho and in London, I may mention that since the report was written the report of assays made in London of a further set of 24 samples has been received. An average of these gave the same result as those recorded in the report. In only one of the 24 London assays is the gold contents shown to be less than the Morro Velho assays showed, all the others show higher gold contents. With regard to the contemplated reservoir on the Matuca stream, to which we have been looking forward for some time past as likely to afford us some help in our water-power by-and-bye, I am sorry to say very little has been done. Examinations have been made as to the nature of the foundations, but up to the date of the last advices no satisfactory foundation has been reached. Wishing to avoid as far as possible any chance of failure in the construction of a work of such magnitude, the board thought it right to seek the advice of Mr. J. F. Bateman, of 16, Great George-street, Westminster. Plans and the papers received have been placed before him, but they were not in sufficient detail to enable him to finally advise the board, and they have, consequently, been waiting to receive further information promised by the superintendent. Some further particulars were received on Monday, and no time shall be lost in placing them before Mr. Bateman. This dam and other necessary works is estimated by the company's engineer to cost about 6500*l.* Mr. Gordon says the cost of it would probably not exceed 8000*l.*, and that it cannot be completed before 1878. On the other hand, work has been undertaken in another locality nearer Morro Velho, with a view to heighten the dam, and, consequently, enlarge the area of a small reservoir made many years ago, called the Bananal tank; this when completed will, it is estimated, contains from rainfall chiefly some 19,440,000 cubic feet of water, equal to about 10 days full supply, which would be a great help to us in dry seasons. It is stated on this work as in the mine, and the Mutuca reservoir explorations, there is an insufficient force, but we are led to hope that it may be completed next year; the estimate of its costs is 5000*l.* The financial position of the company is fully shown in the report. The reserve fund there stated as 32,917*l.* will be increased to 38,629*l.* by the addition now about to be made to it, and we have 14,000*l.* of unexpended capital, making altogether 52,629*l.* available in case of emergency. In conclusion, the Chairman moved the adoption of the report.

Mr. TENDRON, without wishing to reflect in any way upon the management, thought that the shareholders ought to have been kept better acquainted with the condition of the mine. During the time that Mr. Gordon was on leave of absence in this country the returns were very large, and when he went back the returns began to fall off, and no doubt this had arisen from the mine having been injudiciously worked by those left in charge, the killas and mineralised matter which should have been removed when sinking having been left, and had to be removed when Mr. Gordon returned. He drew attention to the fact that about 1*l.* per ton was lost on every ton stamped, and as there were 60,000 or 70,000 tons stamped during the year it represented a loss of 60,000*l.* or 70,000*l.*

Mr. GUIDE endorsed the remarks of Mr. Tendron, and stated that a falling off in produce was calculated to considerably alarm shareholders at a distance, who could not go to the office and ascertain the cause.

Mr. JONES thought that shareholders who were receiving 40 per cent. had not much cause for impeaching the judgment or management of the directors. He asked whether any difference was found in the qualities in the different grades, and whether the directors mixed the different classes of ore and took an average, or whether they kept the different grades separate? He asked whether the directors were doing any prospecting work? It was wonderful that the vein showed itself once and then disappeared, and could not the directors spend some money in making some exploratory works to try and find the vein.

Mr. S. HERAPATH drew attention to the fact that there was no indication of any decline in the property. The report clearly and distinctly explained the cause of the low average for the past half-year, and it was impolitic for persons sitting in that room to pass judgment upon the way in which the mine was worked out there. It was under Mr. Gordon's management that the splendid results of the past few years had been obtained, and this was sufficient to entitle him to the confidence of the shareholders. Anyone could have received a full explanation upon applying at the office, as he had himself done. He did not care about the ups and downs of the shares upon the Stock Exchange; he wanted to feel that he had a solid property for the future. The falling off in the yield was merely an adventitious circumstance arising from the way in which Mr. Gordon thought it right to work the mine in order to put it again in a thoroughly sound state. He should be sorry that there should be any expression of opinion on the part of the meeting calling in question in any way the judgment with which Mr. Gordon was working the property. (Hear, hear.)

Mr. TENDRON disclaimed any intention to make any reflection whatever upon the way in which Mr. Gordon was working the property. He simply wished to express an opinion that the shareholders should have been kept better informed of the position of the mine.

The CHAIRMAN said the directors were as much disappointed as the shareholders could be at the long time it had taken to remove the killas from the mine, but no doubt Mr. Gordon had found the work more onerous than he at first anticipated. It must also be borne in mind that the produce had been reduced in consequence of the illness of some of the men in October, and when men were sick their places could not be supplied as in this country. As regarded the loss of 1*l.* per ton, it must not be supposed that because there was a loss of 1*l.* per ton shown by assay of the tailings there was a loss of 60,000*l.*, because, as a matter of fact, only a portion of the pulverised stone went into the "tailings," the rest going into the mud, and being carried away, so that it could not be recovered. At the same time there had been, no doubt, considerable loss, and the directors had been carefully considering how to remedy it; on that point they had been in communication with a gentleman who had had great experience in gold mining in Mexico, and by the next mail instructions would be sent out to Mr. Gordon which, it was hoped, would save a good deal of the loss which was now incurred. As regarded the mode of stamping the ore, during the last four months some of the ore from the better part of the mine had been stamped, which yielded 14 oits. per ton; the rest of the ore had been taken together, and gave 6·6 oits. per ton—altogether it would give an average of 10 oits. per ton, which was the largest obtained since the opening of the mine. He pointed out that the directors were almost entirely dependent upon Mr. Gordon for the working of the mine. They had put that gentleman in charge, and must be guided by his advice and judgment.

The report was then adopted.

A dividend of 20 per cent. for the half year was then declared, payable on and after the 21st. inst.

A vote of thanks was then passed to Mr. Gordon and staff abroad, and a similar compliment having been paid to the Chairman and directors, the meeting broke up.

OREGON HYDRAULIC GOLD MINES.

The annual general meeting of shareholders was held at the offices of the company, Austinfriars, on Tuesday,

Mr. JOHN IRVING COURTENAY in the chair.

Mr. W. J. LAVINGTON (the secretary) read the notice calling the meeting.

The CHAIRMAN said he regretted that Mr. Bowe—who went out in May, 1875, to attend to the purchase of the property, the construction of the canal, and to superintend the general business of the company—was not present there that day, so as to report personally upon the work he had accomplished. Mr. Bowe had intended to have been here last month, but owing to severe sickness, attributable mainly to the hardship and exposure he underwent in Oregon last winter, he had been unable to travel, but the directors hoped to see him here next month. Proceeding to give a history of the company, he (the Chairman) went on to say that the property was purchased and transferred to the company in July, 1875, and no time was lost in entering into a contract for the construction of the system of canals, running the bed rock tunnels, and all necessary machinery for hydraulic washing on a large scale. Owing to the unusual earliness of the winter season that year, it was impossible to finish the canals before the cold set in. The men were driven down from the mountain in October, and were not able to go up again until spring, so that the main canal was not finished until the spring of this year. The smaller canal, which came from the Thoss property, was finished, and and he must say that great credit was due to Mr. Bowes and his lieutenant, Mr. Ennis, for the exertions they used in getting the work done in the way they did. It was an excessively severe winter, and there were numerous delays, caused by the difficulty of getting the machinery on the mine, which was situated in a very inaccessible region, but by keeping rigidly to it they got all the machinery in, and in the spring they did some washing in the Thoss, and they kept at work during three months, which was the time left before the usual dry weather set in. They kept on with the experimental washing, the object being to ascertain, both with respect to the Read claim and the Thoss, the richest portion of the gravel. No work of any magnitude had been done on the claim previous to the purchase by the company, and it was necessary by a number of experimental washings to test every portion of the gravel, and see which would be best to work in future. He thought the results were quite satisfactory. The pay channel on the Reed claim was a well-defined channel about 300 ft. in width, and during the last run on the Reed claim the yield per inch of water was 43 cents, or in other words the last run yielded something like 34*l.* per day on the Reed claim. On the Thoss claim, although the superintendent was not satisfied he was on the true rich run of gravel, still the washing was richer than on the Reed claim, and the last run on the Thoss claim yielded 72 cents per inch of water, or in other words a yield for each day run of 40*l.* The amount of water used on the Reed claim was sufficient to keep one monitor going, and also on the Thoss claim, but the water gave out at the end of the summer, and neither claim had sufficient to run full power. Therefore, the directors considered the results satisfactory. During the time that they were running with inadequate water power they took out 2196*l.* 1s. 8d., whilst the cost for that time was 1446*l.* 13s., leaving a profit upon the working of that period of 749*l.* 8s. 8d. Now, he thought that profit from mere experimental washings for these months was very satisfactory. (Cheers.) During the summer the superintendent saw that it was absolutely necessary to enlarge the reservoir which was upon that portion of the property called the Thoss claim, and strongly advised the board, in view of the experience he had gained, to extend the main canal (which at that time only supplied water to the Reed claim) to the Thoss claim that was to say, to extend the main ditch 2¾ miles from the Reed, claim to the reservoir upon the Thoss claim. This had a twofold object; in winter there was more water than could be used upon the Reed claim, but by means of the canal the water could be taken from that claim to the Thoss claim reservoir, and thus be stored for use in the summer months, when the water was apt to run short. There were no facilities for building a reservoir upon the Reed claim, and, therefore, the one upon the Thoss claim had been enlarged during the summer, so that whereas some of the water ran to waste in the wet season, for the future none of it would be wasted. Although the directors were very anxious to commence that work they had no means of paying for it until the mine earned a profit, and when the profit to which he had alluded was earned the directors consulted with some of the largest shareholders, and the manager was at once instructed to use the profits for the purpose of finishing the ditch extension and the enlargement of the Thoss claim reservoir, and on the 10th of last month the directors had a telegram from Mr. Ennis, stating that the canal was finished, and the directors had heard since that it worked admirably, and the water was conveyed to the Thoss reservoir, and he was working from that with 400 inches of water. The work had been carried out in a skilful and workman-like manner, and no difficulty had been experienced in running the water through. The cost of those 2¾ miles would be about 1000*l.*; of course, as it was only finished in November the accounts were not yet to hand, but that would be about the amount. He might mention that the digging was done by Chinamen by contract, and the fluming the company did themselves, and the manager wrote word that the digging was done cheaper by contract by the Chinamen than he could have got it done by day labour. They had also carried on the tunnel on the Reed claim another 150 feet, in readiness for the season's working; they would have liked to have carried it further, but the rains began, and the superintendent thought it was not prudent to delay raising the shaft, and, therefore, gave instructions to have the shaft raised when 150 ft. was finished. The tunnel was not expensive, the contract being $8 per foot. Another point to be noted in connection with the extension of the ditch was that it had been constructed of a considerable size; for the first mile it was 1900 miner's inches in size, and the rest of the distance to the Thoss Mine it was 1000 in. in size. The first mile was made larger, because at the end of the first mile was situated the Effinger claim, and in view some years hence of working that claim the canal was fitted to convey water to there. There was another portion of the Thoss claim which Mr. Ennis thought highly of; it was an area of good gravel which ran along a portion of the property known as the Rich Gulch, and the directors of the company had sent some additional machinery there from San Francisco and an additional monitor had also been ordered. All the iron piping had arrived, and the latest advices were that the monitor was at Roseburg, the terminus of the railway, and he supposed long before this had arrived at the ground. He did not think that any further expenditure was needed upon the property. The improvements suggested by the experience of the past had been carried out, and judging from the returns per inch of water, which was the only safe way of forming an opinion upon the value of these gravel mines, it seemed evident that with a fair average of water, and seeing the large amount of machinery which was there, and its capacity for washing on a large scale, the results could not fail to be satisfactory to every shareholder. (Cheers.) In saying that he believed he was only repeating the opinion of experts and others who had seen the property since it had commenced to be opened up by the company. Previous to this company coming into the property there had been no washing on such a scale as was now being done. Assuming there was a fair average water supply, with the appliances which the company now possessed, with the works complete, and the canal finished, he could not see why they should not make very good returns. (Cheers.) In view of this the directors intended to issue the remaining 726 shares, and when those were issued the total expenditure upon the property would be represented by the sum of about 12,000*l.*, and he had very little hesitation in saying that, considering the size of the property and the amount of work done the expenditure would compare favourably with the expenditure of any other hydraulic company, and he hoped during the coming year satisfactory dividends would be paid to the preference shareholders. In conclusion, the Chairman moved the adoption of the report and accounts.

Mr. MORSE seconded the resolution.

The CHAIRMAN, after replying to some questions on minor topics from Mr. FOOT, put the resolution to the meeting, and it was carried unanimously.

Mr. FOOT then moved the re-election of the retiring directors, Mr. Elliott and Mr. Courtenay, and said he was sure that all the shareholders were thoroughly satisfied with the way in which those gentlemen had performed their duties. (Cheers.)—Mr. MORSE seconded the resolution, which was put and carried unanimously.

On the motion of Mr. FOOT a cordial vote of thanks was passed to the Chairman and directors, and a similar compliment having been passed to Mr. Bowe and Mr. Ennis for their careful and able management at the mine. The meeting then broke up.

MALPASO GOLD WASHING COMPANY.

The ordinary general meeting of shareholders was held at the company's offices, Winchester House, on Tuesday,

Mr. A. COBBETT in the chair.

Mr. S. A. COBBETT (the secretary) read the notice convening the meeting, and the report of the directors and statement of accounts were submitted.

The accounts are made up in Colombia to August 31, and in London to Nov. 30. By these accounts it will be seen that a material improvement is shown over the results of any previous year. The returns have been 1589·025 ozs. of gold, realising 6068*l.* 1s. 11d., obtained at a cost of 3839*l.* 16s. 7d., thus leaving a profit of 2168*l.* 5s. 4d. The balance at the credit of profit and loss account is 1516*l.* 16s. 9d. Out of this the directors propose to pay (as soon as the gold remittances, now delayed in transit, shall have been received) a dividend at the rate of 10 per cent. for the past year on the preference shares. This will absorb 749*l.*, leaving 776*l.* 16s. 9d. to be carried forward. The amount expended on the new ditch, &c., has been to date 3385*l.* 12s. 4d. This important work is now almost completed, and for some months the present water supply has passed through the greater portion of it. As the outlay on this ditch has exceeded the amount which was available out of the 7490 preference shares issued, the amount required has been met from the profits made.

With a view to equalising the company's capital account, and thus making the profits actually earned available for dividend, and also for providing the capital required for opening at a deeper level, and utilising the whole of the water supply, the directors propose to issue the remainder of the preference shares. The returns have been obtained from 4256 hours' washing, showing an average produce per hour of 8s·93. It must, however, be noted that the average yield per hour obtained during the last three runs has been 11s·73. Should this very satisfactory state of things continue the profits must be largely increased during the current year. Whilst the returns, and consequent profits, show this satisfactory increase, it will be seen that the number of hours during which washing has been carried on has been less by 1352 than in the previous year. That this is so is due to the time necessarily lost in effecting a junction between the old and new ditches, to constant breakages on the old ditch, and also to a general re-construction of the sluice preparatory to carrying on for the future what the superintendent trusts, through the arrangements he has made, will prove to be almost continuous washing.

The superintendent has now under consideration the importance of opening up the mine at a deeper level and on a larger scale, and with this view intends to commence a preliminary opening without any stoppage to the present works. By this means the best position for deeper and more extensive operations will be definitely ascertained. As the capabilities of the Malpaso Mine to make profits have now been placed beyond all question, it is time that arrangements should be made for making available the enormous extent of ground owned by the company at a point lower on the channel and (following the law of auriferous deposits) probably richer than anything hitherto developed. It is with deep regret the directors have to record the death on April 13 of their valued superintendent, Mr. Cuthbert Druitt, of whose zeal for the company's interests they take this opportunity of expressing their earnest appreciation. The establishment has now been placed under the management of Mr. W. S. Welton, whose long residence in the country and practical knowledge of mining operations will, they trust, result in great benefit to the company's interests. The revolution now taking place in Colombia has not, the directors believe (beyond the delay incurred in the transmission of despatches and returns of gold), been attended with very material detriment to the company's operations. The directors regret to have to announce that during the past year they have been deprived, by death, of the services of one of their co-directors, Mr. R. B. Barrow, whose seat at the board they have filled by electing Mr. Christopher Hopkinson. The directors who retire by rotation are Mr. Christopher Hopkinson and Mr. P. J. G. Rouquette, who, being eligible, offer themselves for re-election.

The CHAIRMAN said that the remarks he had to make would be simple, as all the salient points had been referred to in the report. He had only to bring before the meeting his favourable opinion of the company. They had long been working in the dark, but during the past year they had proved the existence of auriferous gravel, and the average monthly return had been 500*l.* For July and August the returns were 2200*l.*, or 1100*l.* per month, and as these were the last months of the year reported on there seemed no reason to suppose the same results would not be continued, so that he might congratulate the shareholders on the position at the close of the year. A revolution had broken out just at the moment they were realising their expectations; it had checked them and interfered with their financial position, but it could only temporarily interfere with their operations, as all their property was on the surface, and if the re-

volution swept over that part of the country it would not injure them. It was expected the revolution would be over by Christmas, and the removal of men was the only inconvenience caused. Advices from Malpaso were one month earlier than those from Malabar, but they had full confidence in Mr. Welton's management, and that he would tide through the difficulties. If it had not been for the derangements mentioned the 10 per cent. on the preference shares would have been paid, and perhaps there would have been something for the ordinary shareholders. The gold, however, is at Honda, and not for the moment available. As to their new ditch, all would be dependent on the means which Mr. Welton had at hand, but all their operations were profitable, and there had been no attempts at getting good gravel for the August month. Taking July and August returns against the costs there was a fair profit, and there was nothing to lead to doubt that the same results would continue month by month. The unissued shares would be offered to shareholders when necessary *pro rata*. The gentleman they sent out as superintendent met his death when returning to the mines. He formally moved the reception of the report and accounts.

Mr. STEELE seconded the motion, and enquired how many inches of water they were working with?——The CHAIRMAN said they were at present working with 500 inches, but the Medina ditch would be equal to 1500 inches. Their insurance policy covered the gold in transit and at present at Honda.

A SHAREHOLDER thought the report did not show the position of the property as well as it might have been shown. There was a profit for four months at the rate of 7500*l.* per annum, or, if taken for three months, it would be 10,000*l.* per annum, or equal to 25 per cent. on the capital.

The report and accounts were then unanimously adopted. Mr. C. Hopkinson and Mr. P. J. G. Ronquette were re-elected directors, and Mr. L. H. Evans was re-appointed auditor.——A vote of thanks to the Chairman and directors terminated the proceedings.

MALABAR GOLD WASHING COMPANY.

The ordinary general meeting of shareholders was held at the company's offices, Winchester House, on Tuesday,

Mr. A. COBBETT in the chair.

Mr. S. A. COBBETT (the secretary) read the notice convening the meeting, and the report and statement of accounts were submitted:

The accounts are made up in Colombia to Aug. 31, and in London to Nov. 30. At the last annual meeting it was stated that the proprietors had been appealed to to subscribe a sufficient amount of capital to enable the operations at the mine to be carried up to the eastern banks, where it was believed a channel of auriferous gravel existed. Of the new shares offered for subscription 2215 were applied for, and the directors are happy to be able to state that the anticipations they entertained of this amount proving sufficient have been more than realised, for after providing for the then existing liabilities the balance 1365*l.*, with the addition of the gold returns received from the mine, has not only sufficed to carry out the proposed operations, but a balance of 1308*l.* 12s. 1d. remains in hand to the credit of the company. The superintendent's report shows these banks were reached in the month of July, and up to Aug. 31 last (since when no accounts have been received) one run has been made thereon, resulting in a small profit. The existence of a channel to the east of the previous workings has not yet been definitely proved, although the indications still point to the probability of its being found. But in the meantime a very extensive range of virgin gravel has been opened up, which, even though thus far of poor quality, has left a small profit on the first run. This rate of profit it is hardly necessary to state would be considerably increased if at any moment a change for the better took place in the auriferous production of the gravel, which the superintendent sees good reason to expect. The directors regret to have to report that a revolution has broken out in Colombia, which has prevented the receipt of the usual advices from the mines. Mr. O'Reilly, the company's superintendent, has been so long resident in the country, and knows so well how to manage affairs under existing circumstances, that they do not fear that the interest of the company will suffer, excepting from a possible abstraction of labour.

The CHAIRMAN had very little to say, and there was very little in the report to say much upon, but the clean up for August was rather better than expected. The 1370*l.* in hand at the last annual meeting was to be expended in testing the eastern banks; it had not all been expended, as the returns had nearly covered cost. The revolution was going on, but the difficulties were likely to be cleared up by Christmas, and he hoped they would then get their letters, advices, and remittances regularly. He had merely to move the reception of the report and accounts.

Mr. STONE seconded the resolution, which was carried.

The CHAIRMAN might explain that their channel of communication was through the Magdelena river, which at each revolution was stopped, but as the revolutions were always of short duration it was only a temporary inconvenience.

Mr. A. Cobbett (the Chairman) and Mr. H. Drake were re-elected directors, and Mr. L. H. Evans was re-appointed auditor.

The proceedings terminated with the usual vote of thanks to the Chairman and directors.

RICA GOLD WASHING COMPANY.

The ordinary general meeting of shareholders was held at the company's offices, Winchester House, on Tuesday,

Mr. A. COBBETT in the chair.

Mr. S. A. COBBETT (the secretary) read the notice convening the meeting, and the report and accounts were submitted:—

The directors have no change to report in the position of the company. The mines of the company have been kept duly protected, and no expense has been incurred beyond that necessary to keep the title to the property good. Up to a late period the results obtained from the neighbouring hydraulic mines were not such as to encourage the directors to make any attempt towards a renewal of operations at the Rica Mine. It is, however, with much satisfaction that the directors are now able to state that in the month of July last the neighbouring mine of Malpaso (believed to be working on the same channel) began to produce greatly improved results. Had it not been for the unfortunate political state of Colombia, it is probable that the profits being made by that company might have served as an incentive towards forming a plan for such a re-organisation of the Rica Company as might be necessary for raising additional capital for the purpose of bringing on an adequate water supply. When the proper time has, in their judgment, arrived, the directors will lose no time in submitting a plan to the shareholders for their consideration.

The CHAIRMAN might say that there was on the Rica deposit richer gravel than they had either in Malpaso or Malabar, and no doubt water could be obtained, but this was only at considerable cost, so that until they saw their way clear it was undesirable to bring forward any project bearing on the matter. When the anticipated results had been obtained in Malpaso, for they had almost the same shareholders in the three companies, it would give them spirit to take such steps as would enable them to realise similar results in Rica. He then moved the reception and adoption of the report and accounts.

The resolution was seconded by Mr. BENNETT, and carried unanimously. Messrs. H. Drake and J. T. P. Pechey were re-elected directors, and Mr. L. H. Evans was re appointed auditor.

The CHAIRMAN stated, in reply to an enquiry, that 1500 inches of water could be brought from San José and Agua de Dios, but there would be 12 miles to bring it. It was thought that although it would be more costly to bring it at the lower of two levels surveyed, it would be advisable to adopt the lower level owing to the much larger body of water that would be obtained.

The usual complimentary vote of thanks terminated the proceedings.

SOUTH TOLCARNE MINING COMPANY

A general meeting of shareholders was held at the company's offices, Austinfriars, on Monday,—Mr. CHARLES CLARK in the chair.

Mr. J. HICKEY (the secretary) read the notice convening the meeting and the minutes of the preceding one, which were confirmed. The statement of accounts, charging five months' cost against four months' returns, show a credit balance of 275*l.* 11s. 2d. The assets included 797*l.* for forfeited shares in the hands of the committee.

Major FRAZER enquired whether the shares re-erred to in the minutes were absolutely forfeited.——The CHAIRMAN said that they were; they were now the property of the adventurers, and could be disposed of for the benefit of the company.

The SECRETARY, in reply to Mr. E. J. Bartlett, stated that the balance in the hands of Messrs. Roberts was 153*l.* 13s. 2d., and there was 64*l.* 10s. all good in arrear of the last call. The accounts were charged up very closely—in fact, as closely as they could be.——Capt. W. C. VIVIAN said the last months cost-sheet had been sent up and charged.

Mr. E. J. BARTLETT remarked that they might, he supposed, consider the adverse balance to be about 500*l.*——The SECRETARY said that would be about the amount.——Capt. VIVIAN then read the subjoined report:—

Dec. 15.—We beg to hand you the following report:—The 50 fm. level cross-cut has been extended 16½ fms. north of the engine shaft; but, contrary to our expectations, based on the underlay at the 40 fm. level, and above, Fraser's lode has not been intersected. It has thus been proved that the lode referred to, which opened out such good prospects for us at the 40, some of the results from which we had a right to expect to be now realising, changed its underlay directly below the 40, and dipped north instead of south. We have for some time been in daily expectation of cutting into this lode, as the cross-cut has been beyond the perpendicular of it at the 40 (to-day to the extent of about 14 ft.).

We have, however, in the last 24 hours made a discovery which is very important, having cut that which we consider to be the south wall of the great tin lode of South Condurrow and other mines to the east of us. We have thus far only broken into the "cab" of this lode in the foot of the level, and it will be fully a week before we shall be able to see much more of it, as by its rapid dip we have to advance 8 or 9 ft. in the cross-cut to lay open the lode to view for a height of 6 feet. We can only say at present that the "cab" which we have cut into is of precisely the same character as it has been in South Condurrow, being tinny, but not very rich. If we are to have a rich course of tin it will be to the north of this "cab," which in our adjoining neighbour varies in thickness, being in some places 2 ft., and in others 3 or 4 ft. in width. The granite and the part of the lode through which we are cutting are both hard, the price for driving the cross-cut being 18*l.* per fathom. It is evident that Fraser's lode has dipped into the great tin lode at some short distance above the 50 fm. level, and as the former is at the 40 fm. level for a considerable length of masterly size—and, without the slightest exaggeration, a splendid-looking lode, producing in places rocks of almost pure black tin—the chances seem favourable for our making a valuable discovery in laying open the great tin lode into which it has dropped, and to which it has become a feeder.

The cutting through of the great tin lode at the 50 will drain the water from the 40 (which now supplies nearly all the water we have), and enable us to sink on Fraser's lode in the latter level. We think we shall find this lode richer in going down than we have found it in going above the 40, as in the latter direction it declined rapidly in value, and has thus thrown us out altogether in our calculations as to the returns of tin since the last meeting of shareholders. Having now reached the very important object to which reference has been made, three months' further exploration will throw great light on the future of the mine, and in all probability prove whether or not it is to be one of equal value to that of South Condurrow, adjoining it. We see no reason why it should not, but on the contrary, looking at the fact that we are now about to open into the same lode which is yielding so much tin and such good profits there, and under the same geological conditions, that we have a right to anticipate equally favourable results here.

JOSEPH VIVIAN AND SON, JAMES PAULL.

Mr. E. J. BARTLETT thought it peculiar that Frazer's lode should dip into the tin lode in the way Capt. Vivian described, and would like to hear whether there was any cause for it.

Capt. VIVIAN suggested that it might be the granite which comes into the shaft a little below the 40. There was scarcely a doubt that the lode now cut was the great Flat lode of the district, and he believed Frazer's lode would fall into and enrich it. He had thought they would have further to drive to reach the Flat lode. They would cut down the water above by driving the 50; and at the 40 the lode was from 8 to 9 ft. wide, and producing some good ore.

The CHAIRMAN said they had heard the financial statement read, and that was the first thing they had to take into consideration. There was about 750*l.* liabilities to provide for, and seeing that by forfeitures their shares had been reduced to 4500, a 4s. call would no longer produce so large an amount as formerly; on the present number it would only give about 915*l.* That would get them out of debt, and leave them a small balance to go on with, or if they determined to wind-up there would be some little to return exclusive of the value of the machinery. He thought a 4s. call was the least they could do with. He concluded by formally moving the reception and adoption of the accounts.

Mr. F. MACKINTOSH seconded the resolution, which was unanimously agreed to. A call of 4s. per share was made; and on the proposition of Mr. C. WATERSTON, seconded by Mr. BARTLETT, the committee were re-elected.

The meeting was then declared SPECIAL, and the CHAIRMAN remarked that it must be evident to all that their prospects were much altered by the facts given in Capt. Vivian's report, which, of course, had not been received when that meeting was convened, and the committee had felt that the shareholders' patience had been much tried, and that it was desirable to give them an opportunity to express their opinion. It was now for the meeting to decide how the property should be dealt with, and whether the prospects laid before them that day was what they might be satisfied with.

Mr. E. J BARTLETT considered the report very satisfactory. The expenditure upon the whole mine had not been more than one-half or one third of the amount that had been expended on developing other mines to a similar extent. He thought that if they went on for another three months they would be better able to judge what course to pursue. He did not think the results hitherto had been discouraging.

Major FRAZER would corroborate the Chairman's statement that they had long been only making calls, and he considered they were now in a position to come to a conclusion.

Capt. VIVIAN said that the object they had now reached appeared to him to be more important than the cutting of Frazer's lode, as it was cutting the trunk lode of the district. Their expectations were certainly better than they had ever been before. They expected to cut the South Condurrow lode in the shaft when they got deeper, and it would then form a junction with the tin lode. After cutting through the Flat lode at the 50 it would take four months to see it 10 fms. deeper; and it would then be united with the Engine lode. In sinking below the 40 they got the lode, worth 12*l.* to 15*l.* per fathom, and in a month they would intersect the South Condurrow lode at the 50. In South Condurrow it was 3 fms. wide at the 50, and they had a good bunch of tin.

The CHAIRMAN said the committee had not prepared any resolution, but any shareholder could make any suggestion he thought proper.——Mr. E. J. BARTLETT thought it best to leave it to the committee to continue operations, and if necessary to call a meeting before the next four-monthly meeting.——Capt. VIVIAN considered the four months would be necessary, as no one could give an opinion until the lode had been opened upon a little to the east and west.

Mr. MCANDREW represented some large shareholders in the North of Scotland, and was asked to express great dissatisfaction at the way in which operations had been carried on, and to move that the services of the manager and agents be forthwith dispensed with.——Mr. E. J. BARTLETT was surprised to hear such a proposition in the face of such a report, and thought that if those who had considered the step necessary had heard the report they might be inclined to change their opinion. He thought, too, that they ought to consider that Capt. Vivian was himself a large holder, and had regularly paid his calls; in fact, but for the support which Messrs. Vivian had given the company would long since have ceased to exist.

Capt. VIVIAN said he held 1087 shares, and certainly did not know what he had done to cause such great dissatisfaction beyond failing to cut the lode where it did not exist. He had done all he could, and was sure no one could have done more for the mine: he was for his own sake quite as anxious as anyone to arrive at good results.——Mr. T. E. W. THOMAS thought that the ground of complaint ought at least to be stated.

Mr. MCANDREW said that he and his friends were of opinion that they were working in the wrong direction.——Capt. VIVIAN thought results proved the contrary, but if the shareholder meant that they were not working on the copper lode, he need only say that in this he was following the directions of the committee, and they had no funds to work it.——The CHAIRMAN confirmed Capt. Vivian in this, for he found by reference to the minute-book that in April last the committee determined not to work on the copper lode for the present, not having funds to do so.

Mr. MCANDREW moved that the services of Mr. Vivian, the manager, and Capt. Paull, the agent, be dispensed with.——Major FRASER seconded the motion.

The CHAIRMAN said there could be no doubt that the loss to Capt. Vivian had been greater than to any other shareholder.——Capt. VIVIAN thought that just at the moment they had reached the object they were seeking for, it was scarcely fair that he should be replaced and another put in to reap the advantage.

Mr. MCANDREW was not inclined to withdraw the motion.

Mr. T. E. W. THOMAS protested against the resolution as a great injustice to Capt. Vivian.——Mr. E. J. BARTLETT also protested against it, not only on that ground (it would have been a different thing if Capt. Vivian had been receiving 10*l.* 10s. per month, and contributed nothing in calls, instead of holding over 1000 shares), but also on the ground that the whole proceeding was illegal, as not in accordance with the Stannaries Act, which, by the way, also over-rode their own rules, which were invalid, as they had never been registered. He would ask Capt. Vivian whether he thought the matter worth questioning, as if he did he would find plenty to support him.

Capt. VIVIAN thought that if his opponents had the majority, it was not worth while making unpleasantness, though he would have liked to be given another four months, at the end of which he would voluntarily give up his position, and continue to hold his shares if his anticipations were not realised.

Mr. MCANDREW desired his resolution to be put, and four shareholders voting for it and three against it, the Chairman declared the resolution carried.

Capt. Rich was appointed manager, and the meeting separated.

The following protest was made by Messrs. E. J. Bartlett, and T. E. W. Thomas to the foregoing resolution dismissing the services of the manager and agent:—We protest against the resolution on the ground of its illegality, no notice having been given of it as the business of the special meeting, and also of its injustice to Capt. Vivian (who is the largest shareholder in the mine), as well as to other shareholders who have not had notice of same.

SOUTH CWMYSTWITH LEAD MINING COMPANY.

The first annual ordinary general meeting of shareholders was held on Thursday, Dec. 14, at the Great Western Railway Hotel, Birmingham. Mr. Ross having been unanimously voted to the chair,

The SECRETARY read the notice convening the meeting, after which it was resolved unanimously that the directors' report, with the accounts and balance-sheet for the year, together with the report of Mr. John Kitto, the mining engineer to the company, should be taken as read.

The CHAIRMAN: It is now necessary, gentlemen, for me to move that these reports and accounts be severally adopted, but before doing so it will be advisable that I should make a few remarks upon the state of our affairs at present, and as to our prospects for the future. This will be for the information of those proprietors who are here to-day, as well as for those who are not able to be present in person but are by proxy, and who will elsewhere have an opportunity of reading the report of your proceedings at this meeting. In the first place, I have on behalf of myself and the other members of the board of directors to express our regret that the melancholy duty devolves upon me to announce the removal by death of one of our number, Mr. Waterhouse, a gentleman of whom we can all sincerely say that he had the company's welfare at heart; that he was always ready to give us both his advice and active assistance, and that beyond the moral support thus willingly rendered he was never backward when called upon to afford us the more substantial aid of the sinews of war—money, and I am sure we shall all much miss him. (Hear, hear.) Gentlemen, when I addressed you at this time last year, which was the first meeting, held in accordance with the provisions of the Joint Stock Companies Act requiring a general meeting to be held not more than four months from the registration of the company, I had necessarily but very little to tell you, except to express my humble opinion about the operative clauses in the Joint-Stock Companies Amendment Act, and to give you something like a history of the great mine which adjoins ours, and which I at that time so pointedly alluded to, because I was then in hopes that the year's development of our property would enable us to give you some proof that my comparisons were not drawn without thought and careful reflection. Up to this time I may tell you sincerely that our development of this mine has been as satisfactory as anything can be of its kind, and making due allowance for the time we have been working. What we have to obtain now is a better acquaintance with our lodes, both as to their general character and magnetic bearings, and also as to their underlie—all most important points for consideration, for the reasons that will be submitted to you presently. With regard to the geological position of our mine, I believe most of your are aware that it is situated in one of the wildest portions of the Welsh hills, and the general formation I believe to be undoubtedly Cambrian rock. In its external features it presents a mass of wild, rugged, and broken ground, with bold mountain ranges and deep, narrow gorges, all highly metamorphosed, having, in fact, just such an appearance as, metaphorically speaking, would make a miner's mouth water, because it is in ground such as this that Nature almost invariably deposits her richest stores. Why this is so I am unable to explain to you scientifically, but it would appear that in these older rocks lying underneath the Silurian formation more time has been allowed for the operations of Nature; that is to say these rocks containing these rich veins are in every respect the oldest known deposits, geologically speaking, and consequently it would seem they have had longer time to grow and increase, or, in other words, to build up from their original great chemical surroundings all those great stores of mineral wealth which are nearly always to be found in formations of this character. It is obvious, however, that these great riches are not to be won without patience, perseverance, and a considerable expenditure of time and money, and when I addressed you at this time last year I did not anticipate that we should so quickly come upon what we have already discovered, or that we should get at it with so moderate a cost. Not that I mean you to understand that we have yet done all that is possible and must be done to make this a dividend-paying mine. We have, however, I believe, so to speak, got hold of the master-key that is presently to unlock for us the riches contained in the vast magazines of wealth that are, I believe, stored in this mountain. The great hill which forms our property contains five known lodes, and may very possibly contain others, but the underlie or strike of these lodes is not always parallel one with another, but converge in reality at various angles, the effect of which is that all these different lodes, or at any rate the majority of them, must form a junction at a certain given point in the interior of the mountain. To reach this point, or points, we are now engaged in driving a series of cross-cuts more or less all due south in order to cut these lodes. At one or two points we have already cut them with the most splendid results, and at others we are convinced that we are not more than three or four months distant from realising similarly satisfactory rewards for our labours. It is to these points that we have been, and still are, most anxiously looking. I should tell you that these levels or cross-cuts are all at a considerable distance above the sea level, the first being no less than 790 feet above the sea, the second one 160 feet above that, and the third one 95 feet still higher, or 1045 feet above the level of the sea. Those are our present highest works. We then commence to descend the mountain again, and at points further to the west we have two other levels, the lowest being now driven on the celebrated Pengenlan lode, which was so celebrated in old Cwmystwith, and even that is 800 feet above the level of the sea, or exactly 10 feet higher than the first level I spoke of, and as this level is one of the richest points of our property, and at which we have large amount of ore, and expect to get a great deal more, it is satisfactory to know—as you will understand by remembering the heights of the different levels I have given you—that we have it at a very useful gradient for the ultimate transport of the ore to our permanent dressing-floors, which will be situated at a point just below our No. 1 or main level. I mention these facts because, in the first place, I think they will be interesting to any shareholder who has not seen the mine, and secondly, because they will enable you to form a right estimate of the care and forethought that will be necessary in the conduct of our future operations if the mine is to be successfully worked. I must here say, however, that I feel, in the presence of your engineer—Mr. Kitto—I am, perhaps, over-stepping the bounds of the chairman's province in thus going into the description of the property, so I will leave the rest to him, knowing that he will be perfectly ready to give any information you may require as to the character of the lodes and what he thinks they are likely to produce. Speaking for myself, and I believe for my fellow-directors, I may say that there appears no earthly reason to doubt that when we meet you at our next annual meeting it will be to show you a very satisfactory dividend. This, however, will be subject to your furnishing us with the necessary authority for the further issue of shares, as suggested in the directors' report. Hitherto our work has been mining only, but before this time next year I hope it will be mining on a still larger scale, and with the necessary machinery erected to enable us to dress and sell our ore. I shall presently have to say a few words upon the subject of the balance-sheet, but before doing so I must tell you that we propose that the shares that have hitherto been held in reserve should forthwith be issued to the proprietors now upon the register. I do not think there will be any necessity to call up more than half the amount, but upon this point I must not be taken to pledge myself, as I cannot penetrate the bowels of the earth with my eye any better than you can. Nevertheless, it is my opinion and belief now that 1*l.* per share will be quite sufficient for our purposes up to about August next. What we may be able to do between this and next August Mr. Kitto will be able to tell you presently, though he has already alluded to the subject in his report. As it is, we have done better during the past year than I thought we should, and I honestly believe, as I have before said, that there is a grand future before us. I must now turn for a moment to the accounts. With regard to them I have very little to say to you, except to offer a few words of explanation upon two of the items. Everything else speaks for itself, and comment from me will, therefore, be unnecessary, unless there is any item upon which you wish for further information, and in that case I should be most happy to furnish it. You will see that the lease of this mine stands in your balance-sheet for 450*l.*, which is, of course, an absurdly small sum, and fortunate we are to get it at that price. The "preliminary expenses," which you will find lower down, has probably struck you as being an equally disproportionate item, and a word of explanation about that also is necessary. The real state of the case is this—Our lease is a lease of Crown property, and in order to stop the nefarious traffic in Crown leases which sprang up some years ago, and led to certain gentlemen spending various terms in sundry Scotch gaols, the Chief Commissioner caused a clause to be inserted in all future Crown leases that whenever they were assigned at a profit the assignor should share with the Crown the profit he so made to the extent of 25 per cent. Now, when the company from whom we purchased made up their accounts they found that they were considerable losers upon the transfer of the lease, and upon propositions being made to us, which propositions or representations were submitted to our solicitor, and by him considered to be just and proper, we felt that we might hand over to the parties a moderate sum by way of reimbursement. This was not done without consideration, and we all agreed that had we been acting on our own behalf individually we should have done exactly the same as we have for you. We have considered it best to place this charge under the head where it appears now, but you will find that year by year it will gradually disappear, because out of our profits we shall annually write off a certain percentage, which will absorb this item entirely. The directors' fees have undoubtedly the appearance of being large, but although they are only what are authorised by the Articles of Association, we have agreed that until the mine pays a dividend those charges shall be reduced. Mr. Kitto has brought with him, as you see before you, some large and elaborate plans of the property, showing the various levels and so forth, and the present state of the workings. These plans we shall have reduced and lithographed, and afterwards circulated amongst the shareholders, so that everyone, when reading our report and that of Mr. Kitto, may better understand what he is reading about than he can without a plan. With regard to our prospects for the future I may mention that, when addressing a public meeting in London lately, I had occasion to direct the attention of the shareholders to the very prosperous condition of the English lead trade. At home we are using vastly more lead than our own mines produce for us, and we have continued to do this during a period of depression in the building trade, which uses lead largely, and in other trades generally almost unexampled, and certainly greater than has been known during the present generation. Keeping this fact in view, it seems to me to be quite evident that the price of lead must soon reach a higher figure, for if war should unhappily break out bullets must be made, and more lead will be wanted for that purpose. On the other hand, if the Conference now sitting should be able to dispose of the Eastern Question without a resort to war there will be an immense amount of returning activity in every branch of the trade in which this metal is used. In either case, therefore, we are fully justified in anticipating a great future for the British lead trade, and for Welsh lead mines in particular. Under these circumstances, and having in mind what has occurred on former occasions, I can only express a hope that the improving prospects of this metal may not be the means of inducing unskilled persons to introduce into our markets schemes which they believe to be sound and healthy and likely to be profitable, but which, from their want of knowledge of the scientific and technical details necessary to ensure the success of mining operations (more particularly the important one of the geological formations), will end only in failure and disappointment. There are good mines in plenty which will abundantly repay the adventurers for their time and outlay if they are but honestly worked, but it is vain to expect to find such mines in formations that are known to be utterly barren of this mineral. Gentlemen, I think I have now detained you long enough, and I will leave Mr. Kitto to tell you anything further you may wish to know. I have, therefore, to move that the reports, accounts, and balance-sheet be adopted.——Mr. PRIME having seconded the motion,

Mr. J. KITTO, M.E.: Gentlemen, I do not know, after what the Chairman has said, that there is anything of importance that I can add to the very full and exhaustive report I have already submitted to your notice, and I am afraid that listening to anything further that I may say will be more tedious to you than going through the report itself, which you have already resolved shall be taken as read. I can at any rate however, say this, that the mine, upon the whole, looks very promising; indeed, I may go further than very promising, and say that the mine looks very well. We have come during the year upon far more ore than I expected to have discovered at the beginning of the year. We have got some two or three fine heaps of that stuff at surface that we have got out of the different drivings, but that, as compared with what we have developed, and which is standing high and dry ready to be got out, is a very small quantity indeed. During the coming year I look forward to our operations being attended with great success, because our preliminary work is nearly accomplished, and we have now simply to carry on till the whole is completed. We have started different levels at different parts of the sett, extending from the east end to the west end, and in three out of four of those levels we have got bunches of ore, such bunches of ore as will pay very well when we begin to stope in them, for I must tell you that we have not began to stope in any of the levels yet. We have not communicated with our shaft from surface, but we have commenced putting up winzes for opening up the ground from one level to another, and for opening up the mine generally. These are in progress, and at an early period will be in full operation. And now, gentlemen, instead of occupying your time by repeating particular items of information that I have already inserted in my report, I think it will be better that I should sit down, and then if any shareholder should wish to ask me any questions I shall be most happy to furnish every explanation in my power.

The CHAIRMAN: Have you marked your lodes upon the plans we now see on the walls before us?——Mr. KITTO: Yes; they are all marked.——The CHAIRMAN: You mean to say that these workings here shown are exactly as they are upon the respective lodes?——Mr. KITTO: Yes.——The CHAIRMAN: Do you not think it would be as well to mark the strike of the lodes? A novice could not understand this.——Mr. KITTO: The workings will show the lodes themselves; but what bearings the lode would take beyond the workings of course I do not know.——The CHAIRMAN: I do not think we quite see which is the north lode and which is the next parallel one to it.——Mr. KITTO: This (indicating on the map) is what we call the No. 1 lode, and this the north lode; this is more to the north than No. 1. This one here is the east lode, and this level (pointing), you will observe, is not far from where this lode and that lode form a junction.——The CHAIRMAN: But the letterings on the plans are not quite so profuse as they might be. Is this another level on the lode close to the river?——Mr. KITTO: No. What you are now pointing to is the upper level.——The CHAIRMAN: But upon the same lode?——Mr. KITTO: No, upon the upper lode.——Mr. KENT: I think you say in your report that there is one exception where you have not been driving through lead?——Mr. KITTO: Yes, that was where it would not pay; but I am in this lode (pointing to plan), and a very fine lode it is.——Mr. BROOKES: There has been a large quantity of blende got out of it?——Mr. KITTO: Yes; a very

large quantity of blende, and we have also gone through two distinct branches of ore, one here (showing on map) and another at this point.

Mr. ROSS: How long do you think it will be before this level gets under the spot where you made that discovery on the lode before?——Mr. KITTO: Well, this (pointing) is where we are now, and it is not very far to drive.——The CHAIRMAN: Then, may be look forward to having further discoveries made shortly?——Mr. KITTO: Yes, very shortly. In fact, I should think that further discoveries would be made within a month.——The CHAIRMAN: What cross-courses have you? I ask this because some of us have been led to think that there are large cross-courses coming across our sett, and we shall be glad to know whether further investigation confirms that view or not?——Mr. KITTO: We have not driven enough yet to enable me to answer that question satisfactorily yet. We found our first lode, then we lost it, and then we found it again 5 or 6 ft. further in, and this disorganisation was due to small cross veins of clay.——The CHAIRMAN: Have you found a similar geological feature in any other part of the sett?——Mr. KITTO: No; that is the only cross lode we know of as yet.——The CHAIRMAN: What is the composition of these cross courses—what is their geological character?——Mr. KITTO: Soft spar and clay.

A SHAREHOLDER: Do you know sufficient about the mine that adjoins South Cwmystwith to say with certainty that there are cross-courses there which produced great bunches of lead at the point of intersection with the lode?——Mr. KITTO: I cannot say that for a certainty, but I believe it to be the case.——A SHAREHOLDER: Because rumour says that there are these cross-courses running into our sett.

Mr. KITTO: I do not believe all that rumour says, but it is very probable.——The SHAREHOLDER: But these (pointing) are all parallel lodes, unaffected by anything on the other side?——Mr. KITTO: Quite unaffected by anything on the other side.——Mr. BROOKES: Do you know the spot where they said they were getting so much lead from this junction of lodes and cross-courses?——Mr. KITTO: That was up the river just about here (pointing to map).——Mr. BROOKES: Would that be a parallel lode to ours?——Mr. KITTO: Yes; that is parallel with ours.——Mr. BROOKES: Do you know whether they lost this lode through a cross course?——Mr. KITTO: They drove up to this point (showing on plan) when they were suddenly stopped at some soft, shaly ground, but afterwards we heard that they had cut through the soft ground, and never came upon the lode again. It is the Pengeulan lode, and in our mine we have cut it very rich.

The CHAIRMAN: Now, which is the level where you saw at the mouth a lode with good lead in it?——Mr. KITTO: That was in one of the cross-cuts.——The CHAIRMAN: Point it ont.——Mr. KITTO: This is it (referring to map).——The CHAIRMAN: Then you mean us to understand that in your opinion you think this great lode of our neighbours has twisted down to this point in our sett (indicating on plan)?——The CHAIRMAN: One of the most highly interesting points for us, however, is the junction of all the lodes.——Mr. PRIME: When do you suppose you will be able to come at this point of intersection?——Mr. KITTO: That I should think will be some months yet; in fact it must be, because we are sinking now for ventilation to our deeper levels, and we cannot begin to work in that direction yet, but in a few months time we shall be able to work up to it.——Mr. KENT: It appears to me that almost everywhere you go about this point you come upon lead (pointing).——Mr. KITTO: Is there a little cross-cut just there.——The CHAIRMAN: Yes; and in that lode there is some of the most beautiful lead ore I ever saw.——Mr. KITTO: There is a very large lode here 25 ft. wide, which will probably yield a large quantity of lead.——Mr. KENT: And will that level (pointing) run into this lode?——Mr. KITTO: Yes.——The CHAIRMAN: Do you think you have enough ground opened now to justify the putting up of machinery in the spring, as suggested?——Mr. KITTO: Yes, certainly I do.

The CHAIRMAN: And what time in the spring would you have it ready to commence work?——Mr. KITTO: I do not propose to commence working the machinery in the spring.——The CHAIRMAN: When then?——Mr. KITTO: Not till the summer.——The CHAIRMAN: I should have liked to have heard you say you would have it ready to begin in the spring, because if you put it off till the summer in three or four months afterwards you have the bad weather coming on.——Mr. DAVEY: You say you have done no stoping yet: what amount of lead have you got from the drivage?——Mr. KITTO: Perhaps 25 tons.——The CHAIRMAN: I should have thought that you had at least 30 tons.——Mr. KITTO: You may be right.——A SHAREHOLDER: What will be the cost of the dressing machinery?——Mr. KITTO: It will probably come to 700*l.* or 800*l.*, but I should like to see (say) 1000*l.* set aside for that.

The CHAIRMAN: Do you feel quite certain, Mr. Kitto, that if you have this machinery put up as proposed you will be selling ore before the next annual meeting?——Mr. KITTO: Yes, certainly.——The CHAIRMAN: You think you can promise that?——Mr. KITTO: I have no doubt about it.——Mr. PRIME: In your opinion does the mine present as good an appearance as it did when we went down last year?——Mr. KITTO: A more favourable appearance.——Mr. ROSS: I can say that when I went down a short time ago it had certainly very much improved. I very carefully examined it when I was there last.——Mr. BROOKES: I also visited the mine with Mr. Kitto, and found it very much improved.——A SHAREHOLDER: I see you say you have in one place a rib of lead 18 in. wide?——Mr. KITTO: Yes.——The SHAREHOLDER: And you value that at 2 tons to the fathom?——Mr. KITTO: Yes.——The SHAREHOLDER: Is not that a very moderate estimate for such a width of ore?——Mr. KITTO: Very moderate indeed.——Another SHAREHOLDER: From experiments I have made I have found that only 1 inch of solid lead in a lode of this width will give about 12 cwts. to the fathom.——Mr. KITTO: But if I were to tell you that you had 2 or 3 ft. of lead all the way you would want to see an extraordinary quantity of lead sold. (A laugh.) I can only say with much confidence that I do not believe we have the least cause for apprehension. It is as nearly a certainty as I believe any young mine can possibly be, and yours is a comparatively small capital. A profit of only 1200*l.* a-year will pay 10 per cent. upon it.

The resolution adopting the reports and accounts was then put and carried unanimously.——The CHAIRMAN: Then now we come to the question of raising more capital by the new issue of shares.——Mr. PRIME: From what we have heard to-day, and what is stated in the reports, I suppose we may take it that if the capital were made up to 9000*l.* or 10,000*l.* that would be sufficient to work the mine?——Mr. KITTO: Oh, yes.——The CHAIRMAN: You will observe that there is only 6000*l.* paid-up out of the 12,000*l.*——Mr. KITTO: The 12,000*l.* you have now in hand will pay for the machinery.

The CHAIRMAN: Then, gentlemen, I shall now move "that the 3000 shares held in reserve, and still remaining unallotted, be issued at par, and that 1*l.* be called up thereon, payable as follows, that is to say—5s. on Jan. 31 next, 5s. on March 30 next, 5s. on June 30 next, and 5s. on Sept. 30 next. That such shares be offered to the present shareholders *pro rata* in the first instance, and any shares not subscribed for by the present shareholders within 14 days from the date of the notice inviting applications for the shares shall be allotted and disposed of as the directors shall determine."——Mr. KENT seconded the resolution; and, after a short discussion as to whether in the form proposed the money would be received fast enough for the engineer's requirements, it was carried unanimously.

Upon the motion of Mr. BROOKES, seconded by Mr. PRIME, Mr. Killingsworth was unanimously re-elected auditor for the ensuing year.——The CHAIRMAN: I am told that Mr. Mitchell, the manager of the adjoining mine, has expressed a very favourable opinion about South Cwmystwith. Have you heard anything about that, Mr. Kitto?——Mr. KITTO: Yes; the Mitchell's all speak very highly about our mine; and, as they have been upon the spot for more than 30 years, their good opinion is of some value.

After some further conversation, in which several shareholders spoke in high terms of the value of the surrounding properties, and the extremely favourable prospects of South Cwmystwith, the proceedings terminated with a unanimous vote of thanks to the Chairman.

For remainder of Meetings see to-day's Journal.]

MINE ADVENTURERS' POWERS.—The majority (four against three) of the adventurers at the South Tolcarne meeting, on Monday, exercised power in a manner the only precedent for which appears to be an equally objectionable course pursued at a meeting held at the same office a short time previously; and as Englishmen generally are particularly favourable to Fair Play, it is a matter for congratulation that no Englishman was included in the majority above mentioned. It must be distinctly understood that the desirableness or otherwise of the step taken is not a point in the discussion, but there appears to be very strong ground of complaint as to the manner in which the united four achieved their object. It will be seen from the report in another column that an ordinary meeting of South Tolcarne adventurers was convened for Monday, and that notice was also given that a special meeting would be held immediately afterwards to considered the present position of the property. As the mine has long been carried on by the aid of heavy calls upon the shareholders, the majority of adventurers, not in the secret, supposed that the question for discussion at the special meeting was merely whether the mine should be carried on or abandoned—an opinion which was much favoured by the fact of large numbers of shares having been forfeited at recent meetings for non-payment of calls. But the four composing the majority surprised the three forming the minority by proposing, almost without comment, the dismissal of the manager and agent. As the four had applied for, and obtained, proxies whilst the three knew nothing of what was going on, the dismissal was carried, although there are but about 4500 shares in the company, and 1023 of these are held by the manager himself, who has regularly paid his calls. The question was raised at the meeting whether those from whom the proxies had been obtained were aware of the use that was to be made of them, but as this was a question that could not be discussed by the meeting, nothing further was elicited than that Mr. Crawshay, a holder of 700 shares, and who was mentioned by the minority as unlikely to lend himself to any underhand proceeding, had given his proxy to those who proposed the dismissal. The proceedings were altogether irregular, and the removal illegal; although, properly conducted, the removal of managers and agents is the easiest thing imaginable. It might have been assumed that the general meeting had full power to dismiss both Messrs. Vivian and Capt. Paull, but is obvious that those voting for the dismissal considered the general meeting to be incompetent, for no resolution for carrying out the object was brought forward thereat. Yet, if it be admitted that for the dismissal of managers and agents a special meeting must be called the proceedings on Monday would be illegal, because it is an admitted principle that at a special meeting no business can be done except that for which notice has been distinctly given, and that a general notice of intention to do whatever may be thought necessary is of no effect. The protest of those opposing the resolution would probably have been more valuable had reference to the injustice inflicted upon Messrs. Vivian been omitted, as there could then have been no possibility of supposing that they recognised the personal feelings which dictated the resolution, yet it is perhaps excusable upon the ground that nothing can be so highly detrimental to the best interests of mining generally, and mine adventurers in particular, as to follow the examples set at the recent meetings of South Condurrow and South Tolcarne, and thus create the opinion among managers and agents that, however earnestly they may labour in the uphill work of developing a mine, they are likely to be replaced by rivals as soon as the fruit of their labour is within reach.

FOREIGN MINING AND METALLURGY.

This is usually the dead season of the year, and 1876 has proved no exception to the rule as regards the French iron trade. The markets were very dull before, but they have shown, if possible, a little more dullness. Prices remain nominally unaltered, but there has been scarcely any business passing. There has been some demand for iron on building account at Paris, but in the Nord, the Meurthe-et-Moselle, and the Franche-Comté, business has been very quiet. The Loire works are now offering their manganesiferous pig and rough iron in the Haute-Marne. The Creusot Forges Company realised in 1875-76 a net profit of 187,648*l.* The dividend of the year has accordingly been fixed at 2*l.* per share, payable half December 15, and the remaining half June 15, 1877. The company has rigidly kept up its works and plant out of revenue; it has also accumulated a statutory reserve of 143,014*l.* The Pont l'Eveque Forges and Foundries Company realised in 1875-76 a net profit of 12,027*l.* A dividend at the rate of 16s. per share absorbed 5760*l.*, and after providing for sundry statutory charges a balance of 4384*l.* was carried to the reserved profits account. The dividend will be paid half January 2, 1877, and half July 2, 1877.

An Austrian journal devoted to the interests of the mining and iron trades reports an upward movement of iron prices, which it considers to be of sufficient importance to justify a special edition to convey the intelligence. According to this paper, the conviction that prices have declined to so low a point that any further reduction is impossible, as the alternative of entirely suspending production would rather be resorted to by sellers, has induced many capitalists to invest so extensively in pig-iron that in many important instances stocks have been entirely cleared out of first-hands. Single lots to the value of 50,000*l.* have changed owners, and an advance of 12s. per ton has been established. The quoted journal adds that recent tenders for contracts for Bessemer steel rails in Germany show a spontaneous advance of prices to the extent of 10 per cent. On the other hand, says the Allgemeine Zeitung, it should be noted in connection with this advance that the price list in one of the most important companies—the Inneberg—indicates a continued decline.

No variation either one way or the other can be reported in the Belgian coal trade. Contracts are concluded only for comparatively limited periods, as the future is considered very uncertain as regards a revival in industrial affairs. There is equal depression at Liége, at Charleroi, and in the Centre; no one basin is favoured with orders to the detriment of its neighbours. The Spanish naval administration has issued a circular to Spanish colliery proprietors, inviting them to test the quality of their coal at the Carraca Arsenal. The Spanish authorities wish to see whether the foreign coal now consumed in the Spanish Navy cannot be replaced by Spanish coal, with a view to the development of Spanish coal mining. Coal obtained from the Espiel and Belmez Mines has already been tried, and has given every satisfaction. Belgium exports very little coal to Spain, but the course which has been taken by the Spanish authorities is not without interest to English coalowners.

Things are considered to be rather going from bad to worse in the French coal trade. Time keeps creeping on, but the season does not advance in a corresponding ratio, and hence the French coal trade is not active. The iron trade consumes less and less coal, the sugar trade is consuming very little, and domestic consumers are profiting from the exceptional mildness of the season; finally, it becomes every day more and more difficult to deal with external competition. Thus, the coal of the Pas-de-Calais competes with difficulty with English or Belgian industrial coal, more especially as English and Belgian coalowners are making all possible sacrifices in order to dispose of their products upon the French markets. The basin of the Loire is much less affected by this external competition than the basins of the Nord and the Pas-de-Calais. Hence quotations have experienced no change in the Loire district, while they have fallen rather sharply in the Nord, the "concessions" made during the last month amounting to from 3s. to 4s. per ton. As regards the Paris coal market, transactions show weakness, and prices are nominal.

The Belgian iron trade is still dull. An adjudication, divided into 115 lots, for various *materiel* required for the Belgian State Railways with delivery at Malines has taken place during the last few days. Some of the orders thus given out were secured by M. Mobille, who vanquished several German mechanical firms in the competition. The result of the adjudication is that some Belgian establishments will be supplied with work in a hand to hand fashion. A contract for 400 tons of merchants' iron has been concluded at 5*l.* 15s. 6d. per ton with the Sclessen Company; this contract has been chronicled as quite an extraordinary event; in ordinary times it would have been passed over almost unnoticed. Allusion was made recently to an adjudication of steel rails which took place recently on account of the Belgian State Railways; it was not 1000 tons, but 10,000 tons which the company offered to supply at 6*l.* 18s. per ton. The same company has secured an order for 8800 tons of similar rails to be delivered in London. The Cockerill Company has now appliances available for the manufacture of rails, which enable it to produce as much as 80,000 tons per annum; it is accordingly necessary for the company to seek for more or less important external outlets. The manufacture of rails and other descriptions of steel which the Cockerill Company produces upon a large scale renders it necessary for the management to import 100,000 tons to 150,000 tons of minerals annually from Algeria and Spain, as well as from 25,000 to 30,000 tons of English pig-iron. When we take account of the exports of iron and machinery made by the company we arrive at an annual movement of more than 200,000 tons, from which the port of Antwerp profits. It is reported from Christiania that an English firm has just contracted to supply 6000 tons of steel rails at 7*l.* 13s. 6d. per ton, which represents a price of something less than 7*l.* per ton at the works. The Belgian Consol at Tunis reports that two ships recently arrived at Tunis from Antwerp bringing about 200 tons of merchants' iron, plates, and girders. These two vessels left Tunis soon afterwards, one for Italy and the other for Constantinople and the Black Sea. The Consul considers that a line of steamers might be established between Antwerp or Ostend and Turkey or Egypt, stopping at Tunis, the voyages not to exceed one a month. A contract is about to be let at Antwerp for the construction of the iron work of a railway bridge which is about to be thrown over the Senne. In last week's article for "the Belgian Central Railway Company has completed its capital and expects to bring its works into activity in March," read the "Belgian Central Ironworks Company has completed its capital, and expects to bring its works into activity in March."

Copper has remained without animation at Paris, and prices are relatively weak. Chilian in bars has made 81*l.*; ditto ordinary descriptions, 79*l.*; ditto in ingots, 82*l.*; English tough cake, 83*l.*; ditto best selected, 84*l.*; and pure Coroco minerals, 80*l.* per ton. In Germany business in copper has been rather animated; nevertheless prices of some descriptions have slightly given way. Transactions in tin have continued insignificant. Holders have maintained prices with some firmness, but purchasers have made default. Some small transactions have taken place in Banca at 46 fl., while for Billiton 45 fl. have been paid. Tin has maintained previous rates upon the Paris market. Banca, delivered at Havre or Paris, has made 83*l.*; Billiton, 81*l.*; Straits and Australian, 82*l.*; and English, delivered at Havre or Rouen, 81*l.* per ton. The German tin markets have remained without any very great variation, but their general tendency has been good. Rough French lead, and Belgian and German lead have been quoted at Paris at 22*l.* per ton, and lead from other sources at 21*l.* 16s. per ton. The German lead markets have not experienced any very sensible change. Zinc has been in little demand at Paris, and prices have been rather drooping. At Marseilles rolled Vieille Montagne zinc has brought 30*l.* 8s. per ton. The German zinc markets have been quiet, and without much business.

BLUE TENT HYDRAULIC GOLD MINES.

In our visit to the Blue Tent Hydraulic Mine, says the Nevada Daily Transcript, we were agreeably surprised to find this property opening up so well. We are always glad to note the success of any mining enterprise in our midst, and we feel that the Blue Tent Consolidated is proving itself to be one of the best in the county. The claims are situated on the south side of the Yuba river, about 5 miles from this city. On the Gopher Point, overlooking the South Fork of the Yuba, are the lower claims of the company. Stretching along in a line on the rim rock are the Gopher, Johnson, Blue Lead, and the South Yuba claims, all being the property formerly owned by different companies, but now consolidated into one. They are all only partially opened up, but show the deposit of auriferous gravel to be very extensive and almost inexhaustible. The South Yuba claims are the most extensively opened at the the present time, and form the base of operations on the bed rock. After many set backs and great expense the claim is now, in our opinion, brought to a fine working condition, and we are informed by the superintendent that the yield for this season has been quite satisfactory. He is very positive that the best ground in it is yet untouched, but will be reached with all possible speed which circumstances will permit of while working it systematically. The bank of gravel here is 200 ft. in height, 60 ft. of which is composed of a greyish red gravel, and from that depth to the bed rock is blue gravel, resting on a bed rock of metamorphic slate. The gravel here is rather hard, and requires considerable blasting to pulverise and bring it to a washing condition. Two monitors are here at work playing steadily on the bank and sending down a stream of treasure with the mass of debris loosened and carried away. The outlet of this claim is through a shaft and tunnel, the latter being some 550 ft. in length, connecting at the lower end with a system of flumes, dumps, and undercurrents, which convey the washings down a steep declivity until they reach the Yuba, hundreds of feet below. This is beyond question a fine-looking mine, and everything is well arranged around it for economical and efficient work, and what is better, there is an almost unlimited quantity of gravel in sight to be washed. We should have mentioned before that all these claims are situated upon, and form a part of, an ancient river channel, and although the points opened are some distance apart, yet they are part of the same channel. About ½ mile up the hill from the South Yuba claim is the Enterprise, which, as before said, is an extension of the former, but in this claim there is every appearance of a confluence of two ancient streams. There is a very large pit washed out here, and the face of the bank shows a deposit of auriferous gravel over 300 ft. in depth, and it is estimated that the bottom of the pit is not yet down to the bed rock by 200 ft. The working of this claim has been thoroughly reconstructed lately, and the pipes for conveying the water have been removed from their former position to, we think, a much safer and better position for washing the bank—as the frequent caves which used to occur will not now affect the pipes and delay operations.

The ground in this claim does not require any blasting, the streams of water cutting into it without any trouble. Two monitors are here at work, and are run night and day. The washed deposits are carried down a substantial and very long flume, at the foot of which are a number of undercurrents and dumps, reaching nearly down to the river. Everything is so arranged at this point that all the gravel the flume can carry can be sent to it when there is abundance of water. The company own a ditch which is 31 miles in length, and which affords part of the supply of water used in the claims, the balance being purchased from the South Yuba Canal Company. It is said that with the outlay of more capital near the head of the ditch all the water needed at the mine can be obtained by utilising many of the almost natural watersheds in that vicinity. The superintendent has had all the claims of the company connected by telegraph with the water agent and the office, so that calls from the claims a mile away, for water or anything else needed, are made by telegraphic signals, and is almost instantly made known at headquarters. It works to a charm, and pays for itself each month. Whatever misfortunes and discouragements the company may have had in the past, we are satisfied their property is now in a very promising condition. It is being worked systematically and economically, and we feel confident it will from this time forth begin to yield profitable returns. It takes time and the outlay of a great deal of capital to place such a mine on a paying basis, but the object is about achieved in the Blue Tent, and we are glad to note the fact, and hope the owners will get such a return as their liberal outlay in our county entitles them to.

The San Francisco Stock Report adds that gravel mining is being actively prosecuted in the upper counties of California. The tunnels and workings of the companies engaged in opening up the ancient river beds are of vast extent, and have been driven with great labour and enormous expense. Some of the long tunnels require years of patient effort before a return can be hoped for. The Blue Tent works are attracting much attention from mining engineers, and the success attending these and similar operations in other localities is doing much to revive interest in deep gravel mining. The hydraulic mines will be actively worked this winter, and with a good supply of rain will make a prosperous season.

TREATING TIN AND TERNE PLATES.—In the usual method of treating tin and terne plates when ready for the tinning operation, the plates to be coated are put into a grease pot from a water bath singly, then from the grease pot into a molten tin *en masse*, or a number of the plates at one time by an attendant, another attendant then separates the plates and removes them to brush them over upon both sides, each one being treated by him singly. He then hands it over to another attendant who dips it into a tin bath, and on lifting it from this he drops it into another grease pot, from which it rises between a pair of rolls with which this last-mentioned grease pot is fitted, the rolls being caused to rotate by suitable means. Now it is proposed by Mr. George Nurse, of Pen-y-Van, near Pontymister, to take the plates from the dip bath (tin), and place them into a rack in a grease pot in order that the superfluous metal may run off, and the plates become of the same temperature as the grease in the grease pot in which the rolls are fitted, and into which grease pots the plates are next inserted. The advantage of this plan is each plate is made of temperature corresponding to that of the other grease pot, whereby a better surfacing is given to it by the action of the rolls than is at present obtained.

HOISTING APPARATUS AND STAMP HAMMER.—The improved apparatus invented by Mr. P. TEITER, of Heilbronn, Wurtemberg, comprises a stamp hammer which is raised by hoisting or winding up mechanism, and falls by its own weight between suitable guide rails. The said winding up mechanism transmits the movement of a shaft which always revolves in the same direction to the hammer in such manner that the same is raised several times in a minute to any desired height, and the same in falling is not arrested by any obstacle. The working of the machine will be better understood when it is explained that it is driven by a strap running on a fixed pulley, by which a regular rotation of the said shaft and a worm fixed on the same is obtained. The said worm moves a worm wheel fixed on a hollow shaft, whereon is also fixed a ratchet wheel. For transmitting this regular rotating movement to the hammer he employs the following parts:—A double crank, the shaft of which turns in the hollow shaft, pawls fixed on the double crank, and a driving pulley around which the cord for raising the hammer is wound. This cord is fixed by one end to a tension pulley, and by the other end to a hammer passing around the driving pulley and guiding pulleys. The lowest position of the hammer corresponds with the

position occupied by the double crank as long as the cord is kept in tension. As soon as the hammer has fallen two teeth of the ratchet wheel will pull the two pawls, and in consequence thereof give to the crank a rotating movement. This movement is also imparted to the driving pulley fixed to the crank, and the cord is pulled during half a rotation of the ratchet wheel and the hammer raised. The foundation plate receives the bearings for the rotating parts of the machine.

Registration of New Companies.

The following joint-stock companies have been duly registered:—

HOLMBUSH (Limited).—Capital 60,000*l.*, in 1*l.* shares. To carry on business as miners, smelters, metallurgists, and dealers in ore, &c. The subscribers (who take one share each) are—John Pass, Weston-street, Bow Common, acid manufacturer; A. D. Rattray, 3, Ossery-road, Old Kent-road, merchant's clerk; G. Schofield, 20, King's-square, E.C., accountant; Stephen Boomer, 94, Pitfield-street, clerk; E. G. E. Terranean, Southampton-street, Holborn; S. V. Montefiore, 31, Lombard-street, accountant; David Roberts, 11, Batsford-road, St. John's, New Cross, secretary. The directors are not yet appointed, but they are not to exceed seven in number. The remuneration will be 500*l.* per annum, with travelling expenses and additional sums for local and managing directors.

BLACKROD COAL COMPANY (Limited).—Capital 20,000*l.*, in 5*l.* shares. To acquire the Blackrod Colliery, Lancashire, now in the occupation of the Blackrod and Bryn Moss Coal and Cannel Company (Limited). The subscribers are—Humfrey Atkinson, Bell's Close, Scotswood, joiner, 100; Joseph Houghton Buckley, Kirkham, mill manager, 100; William Nuttall, Oldham, 100; E. Neville, Chorley, cashier, 10; Peter Grime, Chorley, underlooker, 10; John Watts, Manchester, insurance broker, 40. The directors are—Messrs. John Watts, J. H. Buckley, W. Nuttall, Theodore Booth, and James Wild, the qualification being the holding of 10 shares.

NORTH YATE COLLIERY COMPANY (Limited).—Capital 25,000*l.* in 10*l.* shares. To acquire and work a colliery in the parish of Rangeworth, Gloucester, and to carry on business as coal and ironmasters, brick and tile manufacturers, &c. The subscribers (who take one share each) are—W. F. Laurence, 81, Oxford-terrace, Hyde Park, contractor; Hew Dalrymple, 25, Pembroke-road, Clifton, gentleman; E. L. Owen, Iron Acton, Gloucester, mining engineer; Ralph A. Busby, Silwood-place, Brighton, M.D.; E. L. Owen, Jun., Iron Acton, mining engineer; F. B. Laurence, 81, Oxford terrace, Hyde Park; A. R. Busby, 17, Silwood-place, Brighton, gentleman. The directors are Messrs. W. F. Laurence, Hew Dalrymple, E. L. Owen, Dr. Busby, and E. L. Owen, Jun. Mr. E. L. Owen will be managing director. The qualification is for director 20 shares.

GEORGE KNOWLES AND COMPANY (Limited).—Capital 300,000*l.* in 10*l.* shares. To take over the business of Messrs. G. Knowles and Sons, cotton spinners, &c. The subscribers (who take one share each) are—George Knowles, Tudor House, Heaton, Cheshire; Thomas Knowles, Eccles; George Knowles, Jun., Hampsons, Belmont; Herbert Knowles, Tudor House, Heaton; J. C. Walterhouse, High Lea, Alderly Edge; B. Hick, Park-road, Bolton; Jabez Broadbent, 84, Arkwright-street, Bolton.

TOLLESBURY AND MERSEA, BLACKWATER, OYSTER FISHERY COMPANY (Limited).—Capital 30,000*l.*, in 5*l.* shares. To acquire rights of fishery in part of the River Blackwater, Essex. The first seven subscribers (all of West Mersea, Essex) are—Hugh Green, 50; Charles Cock, 50; John Bacon, 50; John Bacon, jun., 25; E. Longstaff, 25; W. H. Cooke, 10; John French, 10.

MANILA YENGARIE COMPANY (Limited).—Capital 250,000*l.*, in 10*l.* shares. To carry on the culture and manufacture of sugar at Manila and in the Phillipine Islands. The subscribers are—George Rainy Young, 14, Leadenhall-street, 250; A. Bruce, 46, Queen Victoria-street, 150; Robert Tooth, St. Mary Axe; Alfred Muir, 8, Woodlands terrace, Higher Broughton, Manchester, 10; R. P. Wood, Liverpool, 250; Charles Garnett, Bonchell House, Tamworth, 20; Robert Garnett, Bonhill Lodge, 10.

CENTRAL URUQUAY RAILWAY COMPANY OF MONTE VIDEO (Limited).—Capital 1,000,000*l.*, in 10*l.* shares. To acquire and take over, at any cost, the railway and other property, together with the liabilities, of the Monte Videan Company, called the Compania del Ferro Carrie del Uruquay. The subscribers (who take 250 shares each) are—G. W. Drabble, 1, Cambridge-square, Bayswater; Frank Parish, 68, Gloucester terrace, Hyde Park; John Fair, 50, Hamilton-terrace, St. John's Wood; Loftus Fitzwygram, 89, Eccleston-square; G. A. H. Holt, 36, Cambridge-terrace, Hyde Park; W. C. Quilter, 8, Tokenhouse-yard; C. W. Earle, Cambridge terrace, Hyde Park. The directors are—Messrs. G. W. Drabble, John Fair, Loftus Fitzwygram, and Frank Parish. This may be regarded as a formal registration of an established company.

WOLVERHAMPTON TRAMWAYS COMPANY (Limited).—Capital 50,000*l.*, in 10*l.* shares. To construct tramways at Wolverhampton. The subscribers are—Sir Wilford Brett, Esher, 20; William Barfoot, Leicester, 10; Clement Streeton, Leicester, 10; H. Hughes, Leicester, 20; W. Mousley, Clifton, Bristol, 20; W. T. Bourne, Worcester, 20; J. W. Newton, C.E., 8, Furnival's Inn.

HASLAM FOUNDRY AND ENGINEERING COMPANY (Limited).—Capital 100,000*l.*, in 100*l.* shares. To acquire the Union Foundry, Derby, belonging to Mr. Alfred S. Haslam, trading under the style of Alfred Searle Haslam and Co. The subscribers are—A. S. Haslam, Derby, 80; C. J. Appleby, Emerson-street, Southwark street, 10; Joseph Jessop, Graston-place, Leicester, 10; Edmund Pontifex, Shoe lane, 15; John Barton, Shoe-lane; H. W. Neild, Brighton; W. H. Ashwell, Cauldwell-street, Bedford, 10.

STRAHAN AND COMPANY (Limited).—Capital 22,000*l.*, in 50*l.* shares. To take over the publishing business of Mr. Alexander Strahan, of Paternoster-row. The subscribers (who take one share each) are—Francis Peek, 4, Fenchurch-street; J. B. Paton, Forest road West, Nottingham; M. Richardson, Palmer's Green-road, New Southgate; J. C. Stuart, 34, Paternoster-row; Alexander Strahan, 34, Paternoster-row; A. P. Watt, 34, Paternoster-row; W. Gelland, 62, Great Percy-street.

BRECONSHIRE WOOLLEN COMPANY (Limited).—Capital 20,000*l.*, in 5*l.* shares. To carry on business as wool staplers and manufacturers. The subscribers are—Percy Williams, Pierpont, near Brecon, 20; H. Jones, Cyfartha, 20; H. Games, Brecon, 20; L. Jones, Brecon; W. H. Morgan, Linden House, Turnham Green, 60; Richard Webb, Brecon, 20; G. Williams, Brecon, 10.

UNIVERSAL TRADE PROTECTION SOCIETY (Limited).—Capital 10,000*l.*, in 20*l.* shares. To establish a Trade Protection Society. The subscribers (who take one share each) are—Joseph Young, 28, Nevill-road, N.; J. F. Clarke, Woodville Grove, Islington; John Burdin, Woodville Grove; Alfred Hudswell, 90, Cannon-street; C. Woodcock, Percy street, Hoxton; W. F. Jessup, Tottenham-road; and W. Gunter, 3, Crown-street, Camberwell.

BERLANGA SILVER-LEAD MINING COMPANY (Limited). — Capital 50,000*l.*, in 10*l.* shares. To acquire from Mr. C. Burnup certain silver-lead mines, known as the La Pastora and Chapperal group, situate at Berlanga, near Seville, province of Badajoz, Spain. The purchase consideration is to be 3,000 fully paid up vendor's shares of 10*l.*, to be paid upon trust to Mr. P. D. Hickman, representing the company until the title to the property is proved, after which 1500 shares will be transferred to Mr. Burnup, and 1500 shares to Messrs. Murrieta, of Adam's court, Old Broad-street. The subscribers (who take one share each) are—P. D. Hickman, 17, Mincing-lane, colonial broker; A. H. Moses, Fenchurch House, merchant; Cuthbert Burnup, Seville, Spain, mining proprietor; H. W. Price, 17, Mincing-lane, colonial broker; A. A. Levy, Fenchurch House, merchant; E. Hooten, 36, Church road, N., merchant; Moses H. Moses, Fenchurch House. Mr. P. D. Hickman is the only director at present appointed. The qualification is fixed at shares to the value of 250*l.*

DEVONPORT AND TIVERTON BREWERY COMPANY (Limited).—Capital 60,000*l.*, in 5*l.* shares. To purchase the New Passage Brewery, Devonport, and the Old Brewery, Tiverton. The subscribers (who take one share each) are—Joseph Collins, Shepherd's Bush; W. H. Harrison, The Elms Lampton, near Hounslow; Charles Russell, 115, Queen-road, Peckham; R. V. Pentecost, 3, Park-lane, Stoke Newington; J. A. Dobson, Bonner-road, Victoria Park; A. F. Powell, 19, Landsdowne-road, Clapham; E. Cook, Manor Villas, Leyton.

BANBURY WOOLLEN TWEED COMPANY (Limited).—Capital 25,000*l.*, in 10*l.* shares. To purchase the business of Messrs. Platt and Medley, and Mr. Guy Medley, of Banbury. The subscribers are—John Fortescue, Banbury, 100; W. Strange, Banbury, 250; Guy Medley, Southport, 50; Samuel Medley, Banbury, 250; David Cargill, Banbury, 50; W. Edmunds, Banbury, 50; Chas. Neighbour, Banbury, 20.

KENNINGTON OVAL SKATING RINK COMPANY (Limited).—Capital 30,000*l.*, in 2*l.* shares. To establish a skating rink at Kennington Oval. The subscribers are—William Callingham, 2, South Lambeth, 5; C. W. Corpe, 19, Bellefield-road, Brixton, 5; E. L. H. Power, Longridge-road, South Kensington; Percy Haines, Stenning, Beddington, 1; C. G. Faichon, 20, Pembury-road, Clapton; E. Dawson, Beresford-road, Canonbury.

LLANSTEPHAN PIER AND STEAM FERRY COMPANY (Limited).—Capital 6000*l.*, in 5*l.* shares. To construct a pier at Llanstephan, near Carmarthen.

CORDOVA IRON MINING COMPANY (Limited).—Capital 400,000*l.*, in 20*l.* shares. To take over, by agreement with the present proprietors, certain iron mines and property known as the San Lazaro, San Jose, and San Luis, situate in the district of Villa Viciosa, province of Cordova, Spain. The subscribers (who take one share each) are—James Nobel, 74, Rue de Ranelagh, Paris, economist; C. de Secqueville, 3, Rue Lafitte, Paris, mining engineer; H. E. S. Eiche, 26, Richmond-terrace, Chatham-road, out of business; Charles McKay McDonald, 18, Portland-road; W. Thomas Ager, 3, Barnard's Inn, Holborn, surveyor; Edward Jones, 3, Barnard's Inn, surveyor and engineer; James Weldy, 25, Valentine-place, Blackfriars, agent. The subscribers will act as directors until the end of the year, when the management will devolve upon Viscount Secqueville, mining engineer; James Nobel, Baron de Bache (who will be managing director at the mines), and H. Walter Wheeler, of 20, Cockspur-street. The qualification for the directors appointed by the Articles of Association is 50 shares, and for future directors 200 shares. The remuneration of the directors will be 400*l.* per annum, the managing director to have 600*l.* per annum in addition to the first-named sum.

RIVER PLATA LIGHTHOUSE COMPANY (Limited).—Capital 80,000*l.*, in 20*l.* shares. To acquire certain concessions from the Government of Uruguay for the erection of lighthouses on the River Plata. The subscribers are—Wm. G. Craig, 14, Wharf-road, City-road, iron merchant, 1; W. A. Cuthbertson, 3, St. Michael's-alley, 1; Percy Wood, Queen Victoria-street, 1; J. H. Edwardes, 64, Westbourne Park-road, 1; Paul de Mountravel, 19 and 20, Victoria-street, 2; F. L. Torne, 1, Queen Victoria-street, 1; A. Stewart, 160, Finborough road, 1.

BENTHAM MILLS SPINNING COMPANY (Limited).—Capital 80,000*l.*, in 10*l.* shares. To acquire the business of the Bentham Mill Company, and to carry on business as cotton spinners, &c. The subscribers are—Joseph Rontree, 19, Bootham, York, 511; Edward Priestman, Moorfield, Manningham, Bradford, 400; W. W. Hoyland, 16, Lionel-street, Birmingham, 55; E. Grayson, Bentham, Lancashire, 500; Thomas Greenup, Bentham, 280; W. Mundall, Wigton, 350; J. Carr, Moss lane Cottage, Burton, 25.

TAYLOR AND JESSOP (Limited).—Capital 5000*l.*, in 10*l.* shares. To purchase the rights of Robert Taylor and J. M. Jessop in the Effingham Engineering Works, at Grange lane, Sheffield. The subscribers are—J. M. Jessop, Ecclesfield, near Sheffield, 18; R. H. Taylor, Ecclesfield, 25; E. J. Blakeley, Sheffield, 50; W. J. Morton, Sheffield, 25; H. Jessop, Sheffield, 10; T. A. Aitken, Sheffield, 4; W. Cavill, Sheffield, 5.

Erratum.—In the Journal of Nov. 25 the capital of the Hush Eisteddfod Minera Lead Mining Company was by a typographical error stated to have a nominal capital of 100,000*l.*; it should have been 10,000*l.* We willingly comply with the secretary's request that the error should be corrected.

LIST OF SMELTING, METAL EXTRACTION, ARSENIC, AND BARYTES COMPANIES IN THE UNITED KINGDOM—1875.

TIN.

Thomas Bolitho and Sons, Chyandour and Angarrack, Cornwall.
Williams, Harvey, and Company, Trethellan and Mellanear, Cornwall.
Daubuz and Company, Cavedras and Treloweth, Cornwall.
R. R. Michell and Company, Trereife, Penzance, Cornwall.
Bissoe Bridge Company, Bissoe, near Truro, Cornwall.
Redruth Tin Smelting Company, Redruth, Cornwall.
Calenick Tin Smelting Company, Calenick, Cornwall.
Tamar Tin Smelting Company, Moditonham, Saltash.
Charlestown Tin Smelting Company, Charlestown, St. Austell.
Tin Smelting Company (Boundy and Owen), Ripley, Derbyshire.

COPPER.

Vivian and Sons, Swansea.
Pascoe Grenfell and Sons, Swansea.
Nevill, Druce, and Company, Llanelly.
Williams, Foster, and Company, Swansea.
Mason and Elkington, Pembrey.
Copper Miners' Company, Aberavon.
Charles Lambert, Swansea.
Landore Smelting Company, Swansea.
Newton, Keates, and Company, Holywell, Liverpool, and St. Helen's.
The British and Foreign Copper Company, Liverpool and St. Helen's.
Mona Mining Company, Amlwch, Anglesea.
Bibby, Sons, and Company, St. Helen's and Liverpool.
Henry Baxter, St. Helen's.
Evans and McBryde, St. Helen's.
James Radley, St. Helen's.
W. Roberts, jun., Swansea.
James Keys and Son, Whiston Works, Cheadle, Staffordshire.
St. Helen's Copper Company, St. Helen's.
Sweetland, Tuttle, and Company, Swansea.
Goole Alum and Smelting Company, Goole.
Pontifex and Wood, Garratt.
H. L. Pattinson and Co., Gateshead.
Landore Copper Company, Swansea.
Ravenhead Copper Company, Swansea.

LEAD.

Nevill, Druce, and Company, Llanelly.
The Burry Port Smelting Company, Pembrey, Carmarthenshire.
Runcorn Smelting Company, Runcorn.
The Panther Leadworks, Bristol.
Sheldon, Bush, and P. S. Company, Redcliffe Hill, Bristol.
Weston, Son, and Company, Bristol.
W. J. Cookson and Company, Newcastle.
Locke, Blackett, and Company, Newcastle.
John Warwick, Newcastle,
Shield and Dinning, Haydon Bridge.
Vivian and Sons, Swansea.
Howdon Smelting Company, Newcastle.
Washington Chemical Company, Newcastle.
Enthoven and Sons, London.
Lock, Lancaster, and Company, London.
Pontifex and Wood, Farringdon Works, London.
Treffry's Estate (C. Hemfrey), Par, Cornwall.
Cornish Silver-Lead Smelting Company (Limited), Point, Truro.
Peter Glover and Robinson, Whines Leadworks, near Warrington.
Adam Eytou, Llanerchymor, Holywell.
The Cambrian White Lead Company, Brymbo, near Wrexham.
Joseph Walker, Parker, and Company, Dee Bank, Bagilt, and Newcastle.
Governor and Company of Lead Smelters, Nenthead, Alston Moor.
W. B. Beaumont, Allendale, Alston Moor.
Benjamin Bagshaw, Eyam, near Bakewell.
Joseph Wass and Company, Lea Leadworks, Matlock Bath.
Snailbeach Lead Company, near Shrewsbury.
Pontesford Smelting Company.
Gibbs and Company, Bonsale Dale, Matlock.
William Sperrey, Via Gellia Leadworks, Cromford, Matlock Bath.
Robert Howe Ashton, Castletown, Derbyshire.
J. Fairburn and Company, Middleton Dale and Bradwell.
T. Wilson and Company.
George Burr.
E. Backhouse, Darlington.
Greenside Mining Company, Penrith.
The Keld Head Mining Company, Wensleydale.
George York, Pateley Bridge.
Duke of Devonshire, Grassington.
The Duke of Buccleugh, Wanlock Head.
The Lead Hills Mining Company, Lead Hills.
The Hurst Mining Company, Hurst.
Lister, Robinson, and Company, Grinton Moor.
R. M. Jaques and Company, Arkengarthdale.
The Blakethwaite Lead Company, Blakethwaite.
R. Milner and Company, Belde Hill.
The Swaledale Lead Company, West Swaledale.
Charterhouse, Blagdon, Bristol.
Mendip Mining Company, near Wells.
Waldegrave Lead Smelting Company (Limited), Mendips, near Wells.
East Harptree Leadworks (Limited), East Harptree, Bristol.
The Mining Company of Ireland (Limited), Dublin.

ZINC.

Bagilt Zinc Company.
Vivian and Sons, Swansea.
William Marsden, Oldland Hall, near Bristol.
Kenrick and Son, Wynn Hall Spelter Works, Ruabon.
Charles Titterton, Phœnix Zincworks, Warrington Junction.
Dillwyn and Company, Swansea.
J. Collingborne, Spelter Works, Warmley, Bristol.
Joseph Thompson, Spelter Works, Carlisle.
Ryland Brothers, Warrington.
Joseph Wethered, Bristol.
Richardson and Company.
Jersey Smelting Company, Morriston, Swansea.

PYRITES PRECIPITATE COMPANIES.

Duncan McKechnie, St. Helen's.
The Widnes Metal Company, Widnes.
The Tharsis Sulphur and Copper Company, Widnes, Newcastle, Birmingham, Glasgow, and Cardiff.
N. Mathieson and Company, Widnes.
The Runcorn Soap and Alkali Company, Runcorn.
Wigg Brothers and Steele, Runcorn.
Newton Heath Reduction Company, Manchester.
Muspratt Brothers and Huntley, Flint.
The Mostyn Copper Company, Mostyn.
Solomon Mease and Son, South Shields.
William Russell and Company, Newcastle.
J. and W. Allen, Newcastle.
The Bede Metal and Chemical Company, Newcastle.
W. Hunt and Sons, Leabrook, Wednesbury.
William Hunt and Company, Castleford.
Harrison, Blair, and Company, Kearsley, Bolton, Lancashire.
William Hasiam, Bolton, Lancashire.
Morris and Company, Doncaster.
H. D. Poclim and Company, Newcastle.
South Devon Metal and Chemical Company, Devonport.
Lord and Company, Calstock.
New Great Consols, Stoke Climsland.

ARSENIC.

Cornwall Arsenic Company, Hayle and Bissoe Bridge (Thomas Willis Field, managing partner, Marazion, Cornwall).
Devon Great Consols Mining Company (Limited), Tavistock.
J. B. Drayson and Company, Harrowbarrow, Callington.
English Arsenic Company, Roseworthy, Gwinear, Cornwall.
J. J. Rayner, Morriston, Swansea.
A. C. Hadland, Swansea.
New Great Consols, Stoke Climsland.

BARYTES MANUFACTURERS.

Pegg, Harper, and Company, Derby.
Ellam, Jones, and Company, Derby.
Stevens Brothers, Matlock Bath.
Mr. Garton, Lumsdale, Matlock Bridge.
Mineral Paint Company, Cromford, near Matlock Bath.
Wm. Hawley, Bonsall, near Matlock Bath.
E. Brown, Bonsall, near Matlock Bath.
Mr. Heginbotham, Stoney Middleton, near Sheffield, and Whaley Bridge.
Middleton Dale Barytes Company, Stoney Middleton, near Sheffield.
White and Company, Chapel-en-le-Frith, near Stockport.

NICKEL AND COBALT.

H. Hussey Vivian, M.P., Swansea.
Stephen H. Barker, Birmingham.
Evans and Askin, Birmingham.
W. Webb and Company, Aston, near Birmingham.
J. H. Williamson, Stoke-upon-Trent.
Rawlins and Son, Liverpool.

GOLD AND SILVER SMELTERS.

Vivian and Sons, Swansea.
Williams, Foster, and Company, Morfa Works, Swansea.
Johnson, Matthey, and Company, London.

SILVER ORES SMELTERS.

Vivian and Sons, Swansea.
Williams, Foster, and Company, Swansea.
Nevill, Druce, and Company, Llanelly.
Burry Port Smelting Company, Pembury.
The Mining Company of Ireland.

VALUE OF GAS SHARES.—Messrs. Baxter, Payne, and Lepper, auctioneers, of Bromley, Kent, and Fenchurch-street, on Wednesday sold by public auction 61 fully paid-up 10*l.* shares in the Bromley Gas Consumers Company, at an average of 23*l.* 9*s.* per share, and 54½ 10*l.* new shares, 9*l.* paid, at an average of 23*l.* per share. This is the highest price ever obtained for gas shares.

MOTIVE POWER ENGINES.

In connection with the construction and arrangement of the pistons slide-valves and air-pumps of motive power engines, and to the safety valves of steam-boilers, some important improvements have recently been introduced by Messrs. GILLOTT and ARNOLD, of Barnsley. The part of the invention referring to pistons consists in the application to a piston of devices or contrivances by means of which one or more spiral springs enclosed in the piston are compressed in the direction of its circumference in such a manner as to adjust the pressure of the packing rings against the cylinder so as to maintain a steam-tight fit, whilst at the same time reducing the friction to a minimum. These devices or contrivances may consist of levers, a cam or wedge, or a combination of them; but they employ by preference a worm wheel made hollow, and formed on its interior with a right and left-handed screw thread, with which engages a corresponding male screw, such male wheal being actuated by a worm, so that when the latter is turned by means of a key passing through the piston cover the screws are forced out against lugs cast on the inside of an internal V ring, thereby pressing the latter against the springs, and forcing the packing rings into contact with the cylinder. The piston cover is also threaded for the reception of a nut for setting the worm fast when the piston is properly adjusted. The adjustment, which is best accomplished when the pressure of steam or other motive fluid against the piston may be readily obtained if desired without removing the cylinder cover, by providing an opening for the introduction of a key opposite the aperture in the piston cover.

The part of the invention relating to slide-valves consists, according to one modification, in providing in the interior of the valve a table formed or attached across the opening of the exhaust port, the upper surface of which table is planed parallel with the face of the cylinder for the reception of an upper valve face which is also truly planed so as to work over it. The valve is made open at the back, whereby it is relieved of the pressure of the steam or other motive fluid which is received and sustained by the table. According to another modification, a plate is fitted to bear against the upper valve face, which is formed on a ring resting upon an elastic packing contained in the body of the valve. This plate is maintained in contact with the upper valve face by means of springs placed between it and the steam sheet cover, but which admits of its rising in case of the engine priming; set screws or wedges are provided for the purpose of adjusting the plate to the ring as required.

The third part of the invention relates to safety-valves for steam-boilers, and consists, according to one modification, in constructing the valve with a double annular face fitting corresponding annular seats with which the valve may be maintained in contact by means of the ordinary lever arrangement, or, as is preferred, by means of a weight, or weights, attached to or suspended from the under side of the valve in any suitable manner. The weight or weights is or are enclosed in a dome or cover, in order to prevent them from being tampered with when the boiler is empty.

According to another modification the safety-valve is made in two parts, forming a duplex valve, the two valves of which are of different areas. The small valve has its seat in the large one, and is maintained in contact therewith by means of a weight connected to or suspended from its under side, whilst the large valve is kept to its seat by means of a weighted lever in the ordinary manner. The top of the large valve is made to cover the small valve, and is provided with openings for the exit of the steam which passes the small valve when it is opened by the excess of pressure in the boiler, thereby relieving the large valve of a portion of its load. The invention also relates to air-pumps, and consists, as applied, to vertical engines, in placing the pump barrel below the level of the foot and delivery valves, so that the water and air and uncondensed steam can flow freely out of the condenser. This arrangement admits of the employment of a piston in substitution for the costly bucket ordinarily used, and also of the pump and valves being made of much smaller dimensions than are usually required. The principle is also applicable to horizontal engines, the pump in that case being made double acting.

GAS ENGINES.—Some ingenious improvements in gas and other explosive motive power engines have been patented by Mr. C. LASCELLES, of New Cross-road; they consist in fitting to the crank or to a supplementary shaft a wheel containing a spring, with one end attached to the wheel and the other to the shaft, directly or indirectly, or to a wheel fitted with stops, so that the action of the wheel from the sudden travel of the piston-rod under the explosive force of the agency employed, is taken partly up by the spring and partly by the shaft in its rotation, the spring or springs then acting upon the shaft or the wheel to maintain a regular rotation of the fly-wheel, and consequently a more regular action of the power and the mechanism which has to be moved by it. The spring may, however, be connected with the fly-wheel. In lieu of the spring air may be compressed and utilised for the same purpose. In practice he fits the fly-wheel loosely upon the main shaft of the engine, and effects its rotation by flat or plate springs (superposed plates), which have the outer ends attached near the periphery, the inner ends of the springs being fixed to arms on a boss or nave keyed upon the shaft, or it may be a wheel thereon, that the percussive thrust of the piston is taken up by the springs in which the power becomes, so to speak, stored to be utilised while the piston is completing its stroke in the cylinder. He fits stops, preferably spheres, in grooved and inclined pockets of a disc to bite the inner periphery of a fixed casing to prevent any back running of the shaft when the springs receive the shock of the explosion, the disc being keyed upon the shaft and the casing on the framing for the purpose.

CASTING STEEL.—In the ordinary method of casting ingots and other articles of steel and homogeneous iron the casting produced is unsound, in consequence of the great rush with which the molten metal is precipitated from the ladle into the mould, the descending stream of metal carrying with it a quantity of air, which is in part retained in the casting, thereby communicating to it a greater or less porosity. Instead of pouring the melted metal from the converter of furnace directly into the mould, Messrs. WRIGHT, SMITH, and BUTLER, of Panteg Steel Works, Monmouth, propose to pour it into an intermediate vessel or channel whereby the height of the vertical column of melted metal entering the mould is diminished, and the rapidity of its motion lessened, and there is, consequently, little tendency in the column of melted metal to carry down with it the air which gives porosity to the casting. They construct a horizontal channel, by preference of iron, lined with loam or brick. This channel is situated over the moulds in which the casting is to be effected. A hole capable of being closed by a plug or stopper is made in the bottom of the said channel over each of the moulds. The melted iron or steel is either allowed to run from the furnace or converters into a ladle, and is allowed to run out of the said ladle into the channel described; or it is allowed to run direct from the furnace or converter into the said channel. The melted metal passes from the said channel into the ingot moulds in gentle streams carrying little or no air with it into the casting. As the moulds fill, the openings in the channel through which the melted metal has passed into them are respectively closed by means of clay stoppers, and the melted metal is thereby shut off. Besides the advantages already enumerated, the invention has the additional advantage that the inconvenience and loss which attend the running or leaking of the ladle when its contents are poured directly into the mould are wholly or in great part avoided by the use of the channel described.

HOLLOWAY'S PILLS.—The diseases common to our climate which endanger man's physical condition will always exist, though they may be mitigated and their effects removed by timely aid appropriately applied. Holloway's Pills are acknowledged far and wide to be most effective purifiers of the blood, the most certain regulator of disordered organs, and the most innocent aperient that can be prescribed. This medicine is applicable to all alike, young or old, robust or delicate; it increases the appetite, and controls all derangements of the bowels. After the disorder is subdued, occasional doses of these pills will prevent any relapse, and moreover secure, promote, and intensify the good results which flow from perfect purity and regularity.

ALMADA AND TIRITO CONSOLIDATED SILVER MINING COMPANY (LIMITED).

DIOS PADRE AND MINA GRANDE.

DIOS PADRE.—Capt. Sprague, Oct. 19: The tunnel end north is still wet, and the lode poor.

Oct. 26: The tunnel end is driving across the lode to get under the Dios Padre shaft.

Nov. 2: In the tunnel end driving across the lode to get under the Dios Padre shaft the lode produces stones of ore, and is letting out a quantity of water. Ground spare for driving.

Frank W. Breach, Oct. 19: In the tunnel end, to avoid a long cross-cut to the shaft at right angles to the level, we have left the wall, and are now driving direct for the shaft. This will save distance, and at the same time cross-cut the lode, and help to drain the water in the shaft, in which there is now 77 ft. The rain for the past week having ceased, we are in hopes of fine weather having set in. I should mention that the tunnel end is still in the same ground, which more resembles a gravelly drift than solid rock. Still, it will stand without timber.

Oct. 26: The Tunnel end—now a cross-cut in part—is still in easy ground, driving 6 ft. per week, with occasional balls of very good ore. The water in the shaft has lowered 10 ft. 6 in. during the past week.

Nov. 2: In the Dios Padre the water is sinking steadily in the shaft. In the tunnel end we have balls of very good ore—lead ore, pitanque, and green ore. The ground is still very loose, but does not require timber. We are now 115 ft. from the shaft.

Nov. 3: In the Dios Padre Tunnel end, a vein of ore 9 in. wide, and very hard and solid, was cut last night. It is composed of pitanque, lead, and green ore, and appears very rich. Should it continue I shall advise you by wire.

MINA GRANDE.—Capt. Sprague, Oct. 19: The level driving north in the 12 fm. level stope produces some ore.

Oct. 26: In the 12 fm. level stope the end is in better quality ore.

Nov. 2: The lode is large in the level driving in the 12 fm. level stope, and appears of better quality.

Frank W. Breach, Oct. 19: In the Mina Grande the ore does not improve, the B ore from there only assaying $57 per ton. Still, I hope for an improvement.

Oct. 26: We have at last at only 15 ft. under the tunnel found solid ore to drive in, and are pushing to the north with all speed. The ore shows better for copper than the western part turned out, and we shall try a buddle to see if some may not be saved for steamer freight. Next week I hope to see the pumps in course of completion to the 24, when we shall, if possible, start the end again. The gearing necessary to attach the pumps to the engine on surface has, with the exception of some small castings, all been made here by our machinist, and will, when fixed, effect a saving of from $25 to $30 per week.

Nov. 2: As the expenses on the mining and dressing of the black ore during the past month amount to more than its net value, notwithstanding that the ore—as an ore—is fairly solid, it follows that its ley for silver is decreasing as the lode rises. With a view to cut down all unprofitable working, I have made a close estimate of the cost on the black and green ore for the past month, and finding that the former does not pay cost, we are now crushing 20 tons from the solid part of the Mina Grande lode, under the tunnel, in order to take an average sample of the whole, and if this should not turn out of a sufficiently good quality to yield a profit on its extraction we must stop the output of black ore entirely, as the ore now in sight in the stopes at the north end of the Virgin has shortened, and it is now split up into threads, so that although richer for silver than the Mina Grande, and containing a higher percentage of copper than formerly, the net quantity obtained by dressing is too small to pay the cost of freight and charges, after the expenses of mining and dressing. As I stated in my letter of Oct. 2 last, I would not now advise the exploration of the 24 and the sinking of the Balvanera shaft on account of the expense, and because of the fact that unless a material change takes place in the Mina Grande ore it will not prove remunerative to work below the tunnel level, with the extra expenses of tramming, filling, hauling, landing, and pumping, and the expenses of an engine and boiler on the surface. All these items are a heavy addition to the expenses of the ore compared to that formerly over the tunnel level. In view of the above I have thought, after estimating the value of the ore we have in the 10 fm. level backs (mentioned in one of my late letters as being about to be drawn), that we can sink the Tirito shaft and drive the tunnel in Dios Padre for six months by devoting the proceeds of this ore, and drawing against our shipments, to these two explorations. These are the really important points of the mines, and both being in easy ground very good advance can be made with the work—say, in the shaft 3 ft. per week for 10 fathoms, and in the tunnel from 4 to 5 ft., allowing for it getting harder than at present. I have a very strong belief, and in this I am not alone, that by a careful management of the discoveries that may be made in the Tirito with the above resources the mine may be made to pay for its own explorations, the which I am not aware of anyone who doubts, would put it in a position to again yield good returns. Speaking of exploration, in connection with the disappearance of the slide in the 42, and the Virgin lode having passed it on the east, Mr. Clemes writes that he would advise $100,000 being expended on exploration in the mines, especially at the north and south end and the Tirito shaft. Regarding the Balvanera shaft, I do not wish it to be understood that I advise its being discontinued. All I mean with respect to exploring the Mina Grande in depth is that I would not explore it in any other way than out of profits derived legitimately from the mine, as I do not consider the inducements held out by what we know of the ore sufficient to justify its being charged to capital account. When the mine can afford it I would advise its being sunk to the 50, and a level driven to connect it with the Dios Padre shaft and the Tirito, cross-cutting at intervals, as it should be remembered that, with the exception of the workings from the Tirito shaft and Mina Grande, we know nothing of the mine below the tunnel level, which is the level at which a mine is usually supposed to commence. The ore in the Mina Grande under the tunnel is very fairly solid, but as there are some doubts of its ley a buddle is now being tried as a test, as I previously mentioned.

Nov. 3: I mentioned in my letter of yesterday's date that a parcel of Mina Grande ore was being stamped separately for the purpose of ascertaining its value, in order to determine practically the prudence of continuing its extraction, and I now beg to append the results obtained from a buddle of 20 tons and the costs:—Mining expenses, including stores, timber, fuel, and all labour in tramming, filling, and hauling—20 tons, at $2·25—$45; reduction expenses, including spalling, stamping, buddling, and stores, fuel, &c.—20 tons, at $1: total expenses, $65. Concentrated ore ready for sacks—2½ tons, at $60—$150, less sacks, freights, and charges on same to England by sailing vessel from Agiabampo—2½ tons, at $40—$100 = $50; loss on 2½ tons clean ore at $6, $15. In face of the preceding I think it would be only a drawback to continue the output of the Mina Grade ore—at any rate for the present—and as soon as I was satisfied that the figures I have put down were correct I stopped its being broken. At some future time I would certainly not only explore the Mina Grande, as advised in my letter yesterday, but also explore the ore under the tunnel, north of where we took the 20 tons, in order to see if better ore does not exist in some other part of the bunch. At the present time I think we ought to carefully husband all our resources to expend at the important points in the mine, and I have every hope that by confining explorations to those parts only where discoveries, if made, may reasonably be expected to be of importance, we may still make the mine pay for the dead work necessary without asking for aid.

THE TIRITO, NEW EAST LODE, AND RED SOUTH LODE.

Capt. Sprague, Oct. 19: The winze below the 42 in Tirito is suspended, and preparations are making for sinking the engine-shaft, probably a few fathoms may be sunk without the drawing lift. The lode in the winze below the 32 in Tirito still looks favourable. The stope in the 10 in Tirito is almost exhausted. In driving south from cross cut on the south lode the lode is not quite so wide as it was last week, but produces ore. The north end is idle, being driven close up to the slide. The red south lode is not so long as formerly, neither does it produce so much ore. This week the stope in the new east lode is in the best part of the lode, and produces some good ore. A side level is being opened north of the Purisima footway to take out the pillars of ore in the old lode; after this is done it will be difficult and expensive to keep open the tunnel level.

Oct. 26: The lode in the winze, sinking below the 32, is poor. The ore appears to have dipped to the south of the winze. In the stope in the 10 a level is being driven north to prove the lode in that direction. On the south lode, driving south from cross-cut, the lode produces small stones of low-grade ore, but its general appearance is unfavourable. North from cross-cut, in sinking below the level for a stope, the lode is unproductive. There is not much change in the stope in the red south lode. In the highest point there appears to be a little improvement in the lode. The stope in the new east lode produces just the same as when last reported on.

Nov. 2: The lode in the stope in the new east lode is without change—produces favourably. In the stope in the red south lode the productive part of the lode is narrow, and of low grade. A stope is begun above the tunnel in the south lode; the lode is made up of boulders of ore and quartz. The level driving south from cross-cut being poor is suspended. The lode is hard and poor in the winze sinking below the 32.

Frank W. Breach, Oct. 19.—As promised in my letter of Sept. 28, and referred to last week, we have sunk 12 ft. on the ore in the 42, and last week we were obliged to stop on account of water, and because to sink a winze only a few feet from the shaft would be, if carried deeper, a useless expenditure, which had much better be laid out in the shaft itself. Before leaving the winze I had ore broken all over the bottom—that is, a fair sample of the ore as we left it; and without any selection the ore was broken up, a fair sample taken and assayed, giving $124 per ton. It is green ore, very docile, and with a great proportion of rich pitanque. The ore is 3 ft. wide, and had it been cleaned in the ordinary manner would, doubtless, have given $150 per ton. In the 32 winze the lode has now widened to 5 ft., increasing in width as we sink. We are down within 20 ft. of the 42; the ore is very solid, but not high-class, and cleans up to $35 or $40 per ton for the Patio. We are now busy lowering the plunger-pole and cistern at the shaft, to enable us to sink below the 42. The new east lode is, perhaps, without change, but I am afraid it is wearing out. In the south part of the slide the lode does not widen as I hoped for, still the ore is fair. Referring to sinking the Tirito shaft without the pumps I requested might be sent, and without waiting to strengthen the engine for deeper hauling, I have determined to try and lighten our hauling gear, as regards the buckets and kibbles; and, as to the pumps, we can raise some from one of our wells that, at any rate, will answer for the present.

Oct. 26.—The chief change during the week has been in the new east lode south of the slide, where the ore has completely given out with us, from no apparent cause. As we have been driving in what answered to the hanging-wall we are now cross-cutting east for the footwall, on which at 7 fms. overhead we had ore, and which I expect to reach in 12 to 15 ft., or a little more than two weeks' work. I cannot but think the ore continues to the 10, as we found almost positive proof of its existence in the back of the 20 stopes. The stopes in this lode north of the slide are yielding poorly in comparison to what they did, both of green and black ore.

The ore in the 32 winze this week has all but given out at a distance of 44 ft. under the level. I do not think it is any reason to suppose we have not ore down to the 42, because what we had in the winze has run out. For some time past we have left the footwall, and followed the hanging-wall at a very sharp underlay to the west, and I believe when we reach the 42 by cross-cutting to the east the ore will be found. I think it most probable we have in sinking passed over the cap of a horse in the lode that shooting up to the hanging-wall has cut off the ore, and which I believe will open out in the 42. In the Tirito shaft the cistern-plat at the 32 will be cut this week, and next week we shall lower the plunger-pole, put in the cistern, and I hope get everything in course to commence sinking below the 42 the following week. By carefully conducting the water in the 42 to a cistern, in which the pump will be placed, we hope to be enabled to sink the shaft dry, at any rate until the footwall of the lode nears the shaft, which will effect a saving in time and money also. I omitted to mention that in the New East lode the black ore is now stoped away up to within a few feet of the stull on the tunnel level, and the little ore remaining at the north end of the stope will be cut out during the next few days. I still hope to keep up the present output of green ore until we get the 32 winze down to the 42, and explode the lode sufficiently to determine if it will be necessary to drive the 42 north, as it will depend entirely on the amount of ore between the two levels whether the latter will repay the outlay for driving. Should the ore not be of any great extent we shall not require the level for ventilation, as the cool season is before us.

Nov. 2: We have cross-cut the new east lode, south of slide, without meeting with ore, and exploration at this point is now stopped. In the stopes at the south end the green ore is gradually decreasing in quantity, and will not average more than 3 ft. The ley is rather better than of late, varying from $40 to $45 per ton for cleaned ore. In the north end the black stopes will stop to-day, as they no longer yield sufficient ore to pay for working. The stope in the 10 fm. level is now worked out. We have commenced stoping the green ore in this lode south of the slide, where we have 40 ft. of rather low ley ore by a width of from 3 to 4 ft. In the Tirito the cistern is being fixed, and the pole will be lowered this week, the rods lengthened, and, I hope, all in readiness to commence sinking next week. In the 32 winze we have sunk through the ore, as mentioned last week, but, as then stated, I believe we shall get the ore by cross-cutting when we reach the 42, or before, if water should prevent our sinking quite to the level.

MINING IN AUSTRALASIA—MONTHLY SUMMARY.

BURRA BURRA MINES.—The report of the South Australian Mining Association states that 901 tons of ore, averaging 27 per cent. of fine copper, were raised during the half-year ending Sept. 30. The directors state that the closed transactions to March 31 last show that the ore produced during the last six months ended that day brought 16,472*l.* 10s. 3d., and the rent and fees realised 2121*l.* 12s. 6d., making together 18,594*l.* 2s. 9d., while the expenses incurred in working the mines, including an outlay of about 4000*l.* for works connected with their permanent development, amounted to 19,460*l.* 16s. 4d., being 866*l.* 13s. 7d. in excess of the items of receipt, and thus reduced the balance standing at the credit of profit and loss to 13,381*l.* 11s. 7d. In the statement of liabilities and assets, the directors have endeavoured to place before the shareholders, as nearly as they can, the present financial position of the association, and the result is that all liabilities can be met from the assets, including the expenditure of something like 6400*l.* in further exploring works during the last half-year by a reduction of the profit and loss account to 6814*l.* 13s. 3d. Capt. Sanders writes that the haulage and dressing are as follows—Haulage: The haulage from the open work has been as follows. Deads, 16,790 tons; ores stuff, 21,382 tons; old timber, 1634 tons; other parts of the mine, deads, 6000 tons; orey stuff, 5000 tons; old timber, 122 tons: total, 50,328 tons. Dressing: 32,000 tons of stuff have passed through the dressing machinery:—Tower machinery, 10,000 tons, yielding 316 tons of 33½ per cent. and 53 tons of 17 per cent. ore; and through the 30 heads of stamps, 22,000 tons, yielding 270 tons of 22½ per cent. ore; tributers' yield, about 254 tons of 27¼ per cent. ore; total yield for the half-year, 893 tons of an average of 27½ per cent. The number of hands all told is 307. Concerning the prospects of the mine, Capt. Sanders states that they are looking better than they were six months ago, and that with the new inclines the returns will be increased.

THE KURILLA.—Since our last notice of this mine nothing of striking importance is reported to have occurred, while the various works are being prosecuted with energy. The produce of ore for so young a mine is most satisfactory, and the quality ranks the highest of any mine on the Wallaroo side of the Peninsula mining district. Between 300 and 400 tons of ore have been shipped to England for sale there, averaging not much under 20 per cent., which for roughed dressed ore is very high indeed; and another shipment, of about 200 tons, is being prepared to follow, and this also will be of equally high percentage. The various works on the original lode are looking well, especially at the 35; and the 45, which is being pushed eastward to undermine the same rich ore ground at a greater depth, is also following a strong lode that is improving in appearance for every additional foot that is driven, although it is yet a good way off the main object in point of distance. This is regarded by all as an indication of an increased length of the ore-bearing portion of the lode with increased depth. Morphett's lode, discovered by Capt. Anthony since the resumption of operations two years ago, is regarded by many as a better lode than the last noticed, that was discovered during the early days of Peninsula mining. On this lode an engine-shaft is being put down and in which the lode is yielding a fair quantity of healthy-looking ore of 20 per cent. while the tributers continue to make good wages at the 10. To drain this lode a new engine is being erected, or rather is already erected, although all parts of the machine are not as forward. They are, however, still enabled to sink the shaft without the aid of the engine, now almost 20 fms. deep. The stratum, a dark-coloured micacious schist, in which this lode is embedded, is of the most genial nature, and is the best guarantee of its ultimate value. Anthony's lode, south of the old lode, is only very partially developed, although Capt. Anthony speaks with great confidence of its prospects after a little more labour is expended on it. We should also notice that many and very important improvements are made to the machinery and winding-gear. Hall's engine has undergone thorough repairs, and several parts have been replaced by new; a new boiler is put in, and both it and the engine are newly housed under iron roofing. Also a run of pulley stands have been put up, connecting the new horse-whim to Morphett's engine-shaft, as also a lofty stage to carry the chain pulleys over the mouth of the shaft. Much has been done with a limited working capital towards developing this very excellent property, but much more might have been done with more ample means. But where a young mine is dependent on its produce to a very great extent, many things of urgent necessity must lie dormant until the "ditch will make the hedge." In this mine no fears need be entertained of the fate of a few thousands as a preliminary outlay; it would all come back again with interest.—*Wallaroo Times.*

The Railway Loan Bill providing for the construction of railway lines from Port Augusta 200 miles northward, from Kapunda to the North-West Bend, Rivoli Bay to Mount Gambier, Burra to Hallett, Kadina to Barunga Gap, and Gladstone to Jamestown, has received the vice-regal sanction.

The news from the Northern Territory is of a satisfactory character. Good results have been obtained both by the alluvial diggers and the reefers. A large deposit of copper has been found at Hamley Creek.

We have been informed that a rich auriferous discovery has been made near the Kangaroo Gold Mine. The stone on trial has yielded at the rate of 4 ozs. of gold to the ton.

During the month we have have had very welcome rains and a continuance of cool weather till the last day or two, so that our crops present a much better appearance than they did; and though we cannot expect an average yield, take the whole colony, yet the harvest will not be such a failure as we had too much reason at one time to fear. In some places the wheat will yield well, and this is particularly the case on Yorke's Peninsula and portions of the northern districts.—*South Australian Advertiser* of Nov. 4.

AUSTRALIAN MINES.

PORT PHILLIP AND COLONIAL (Gold).—Oct. 31: Quantity of quartz crushed for the four weeks ending Oct. 11, 2676 tons; pyrites treated, 20 tons; total gold obtained, 682 ozs. 11 dwts., or an average per ton of 4 dwts. 2 grs.; receipts, 3411*l.* 5s.; payments, 2454*l.* 13s. 8d.; profit, 956*l.* 11d. 4d., which, added to last month's balance of 2551*l.* 0s. 3d., made an available balance of 3507*l.* 11s. 7d. The amount divided between the two companies was 1800*l.* The Port Phillip Company's proportion of which is 1170*l.* The balance of 1707*l.* 11s. 7d. was carried forward to next month's account. Remittance, 1200*l.*

— Telegram, dated Melbourne Dec. 15: Month ending Dec. 6; yield per ton, 6 dwts. 11 grs.; western reef (No. 10 level), 5 dwts. 8 grs. per ton; profit, 1231*l.*; remittance, 750*l.*

YORKE PENINSULA.—The directors have advices from the committee of inspection at Adelaide, dated Nov. 2, with reports from the Kurilla Mine to Oct. 30. Capt. Anthony reports—Kurilla Lode: At the 45, east of Hall's, I have driven about 6 fms. (in all 38 fms.). The lode has been very large, and mixed with the strata, but is now more compact, and better defined, composed chiefly of quartz and dredge ore. I hope to meet with ore, although not the main bunch, after driving another 8 or 10 fms. At the 35 east no change of importance has taken place in the lode, which is pinched and poor. I have employed the men who were driving here to break some ore from the side bunch to get a shipment for the early part of November; but I shall put them back again to drive. The stopes in back of the 35 are yielding (say) 5 tons of 20 per cent. ore per fathom, and accumulating some good dredge ore. Eight men are working on tribute at an average of 8s. 8d. in 1*l.*—Morphett's Lode: The engine-shaft is 9 fms. below the 10; the lode has not yet been taken down for the month. A few hundredweights were taken down for convenience, and there the lode was 1 ft. wide, of solid ore of 20 per cent. At the 19 eight men are working on tribute at 9s. 6d. in 1*l.*—Anthony's Lode: At the time of writing my last monthly report of Oct. 2 I had bored a hole in the face of the cross-cut at the 25, east of Hall's shaft, driving from the Kurilla lode to cut Anthony lode, a depth of 8 feet, the first 4 feet through strata and the last 4 feet through veinstuff that contained iron pyrites and copper ore. I also stated that stones of ore had occurred in the cross-cut in the course of driving it. I have continued to drive south and along the line of the borer hole, as per the intention stated in my last report; and I have found that the pyrites and copper ore contained in the sledge from the borer hole did not come from Anthony's lode, but from branches of veinstuff in the strata; so that, after driving an additional 8 ft. I have not intersected the lode, although there is a great increase of water, and an entire change of strata from hard to soft mica schist of the most genial sort, and interlaced with strings of ore. On the east side of the cross-cut and dead into the face there is a branch of rich yellow ore 8 in. wide, and having all the appearance of a hanging-wall feeder to the lode, there is every reason to hope for a good lode.—Ore Returns: Ore on hand, 200 tons of 16 per cent., or (say) 1800*l.* net. Dredge ore, 200 tons of 5 per cent, which in dressing will be reduced to (say) 60 tons of 16 per cent., or (say) net 440*l.*; total value of ore on hand, 2240*l.*, roughly estimated. I am preparing 200 tons of ore for shipment for the Lock Esk.

SCOTTISH AUSTRALIAN.—The directors have advices from Sydney, dated Oct. 30, with reports from the Lambton Colliery to Oct. 25. The sales of coal for the month of September amounted to 12,454 tons; of this quantity 11,377 tons were sold up to Sept. 29, as was stated in the last report. Up to Oct. 27 (the full month not having been completed when the mail left) the sales amounted to 12,757 tons.

ANGLO-AUSTRALIAN (Gold).—Mr. Clarke, Nov. 1, writes:—From the mine captain's report, which is enclosed, you will observe that the water was got out much quicker than we expected. Capt. Raisbeck informs me that the Ferrons are still driving north, and are now about 160 ft. from the Anglo boundary, and that two days before we commenced pumping that company struck water which kept them fully employed to keep it under, hence they must have materially assisted us in getting the water out so quickly. The work of driving south is being pushed on as fast as possible, and we hope soon to strike stone sufficiently large to make the work easier. The Ferrons Company is still getting gold, and paying well.

— Capt. Raisbeck, Oct. 30, writes:—I have the honour to report progress since the 2nd inst. On that date we commenced pumping, and on the 21st we had the water out of the eastern shaft. Very fortunately our bucket held out, or we should have had extra work and expenses. We were two days repairing pump and cleaning levels. On the 25th inst. we commenced to drive south from the 320 ft. cross-cut; we have driven 10 ft.; the ground is very strong, and the lode small at present. I expect a change in the lode during the next 30 ft. Should we get more quartz the ground will be less expensive. I propose pushing this drive ahead as fast as possible, and be guided by circumstances, when meeting with quartz. There is a cross lode about 30 ft. south of the present end, where I expect a change. Should we meet with payable stone we shall repair and sink the prospecting shaft at once, but our capital will not be sufficient to carry on both places without gold. The tributers have crushed for the month 20 tons of stone, yielding about 1½ oz. of gold. We have no tributers at present.

ENGLISH AND AUSTRALIAN (Copper).—Port Adelaide, Nov. 4: The stock of coal was 3068 tons. There were eight furnaces at work at Port Adelaide—two smelting, five roasting, and one refinery. At the Newcastle works seven furnaces were at work—three smelting, two roasting, one refinery, and one calciner. The shipments of copper since last advices amount to 125 tons.

AUSTRALIAN CENTRAL (Gold).—Mr. Gill, Nov. 2 writes:—No 3 Jump-up shaft and chamber were completed a fortnight since, and the permanent road laid in the bottom level. The main drive to connect No. 3 Jump-up shaft with the present upper level will require about a week more before they are connected and proper ventilation secured. As the deep ground is found to be gradually dipping north, the drive is of necessity carried on in reef to allow for proper levels for drainage, consequently progress is somewhat slow, and no gold is being obtained from this part of the mine at present; as soon as the two drives are joined the dead work will be completed, and the men can be set at profitable work at once. The want of ventilation is operating as a serious drawback at present, as the best ground cannot be worked, the working being confined to ground in the immediate vicinity of No. 2 Jump-up, the best of which has already been mined. Should I be fortunate to tide over my present difficulty, I hope to have about 60 men underground in about a month or six weeks from date. I shall then be in a position to realise what I have so strenuously been endeavouring to obtain—a dividend-paying mine.—[In response to a telegraphic application from Mr. Gill, dated Dec. 2, the directors, on the 7th inst., remitted by telegram a credit of 300*l.*

FOREIGN MINES.

ST. JOHN DEL REY MINING COMPANY (Limited).—Advices received Dec. 9, 1876, ex Valparaiso (s.), dated Morro Velho, Nov. 2:—

GOLD EXTRACTED TO DATE.—The mineral stamped during the second division of October, being a period of 12 days, has given the following produce:—

	Ozts.		Tons.	Ozts. per ton.
From general mineral	7,280·1	from	1258	= 5·788
Mineral roughly freed from killas	7,200·0	,,	705	= 10·213
	14,480·1	,,	1963	= 7·376
Re-treatment by arrastras	932·6	,,	—	= ·475
Total	15,412·7	,,	1963	= 7·851

Equal to .....1776·8335 ozs. troy = ·9051 oz. troy per ton.

The foregoing produce is a little better yield per ton than has been extracted in the second division of the two preceding months. The daily produce of the stamping-mills is about the same, though the whole month may probably give a rather higher yield. At present the stamping-mills are going at a very fair rate of speed, and they are well supplied with mineral.

Advices received Dec. 18, 1876, ex Douro (s.), dated Morro Velho, Nov. 18:—

GENERAL OPERATIONS.—During the first 17 days of November there has been uniformly good duty performed in the mine department, the quarrying, hauling, and delivery of mineral having been carried on with great regularity, and the output of ore being rather above the usual average. Between the 3d and 16th we have had a very acceptable rainfall of 3·25 in., thus augmenting our supply of water, and giving us sufficient power to work not only the pumping and hauling machinery but also the stamping-mills, arrastras, and other machinery of the reduction department at the desirable speed.

PRODUCE FOR THE MONTH OF OCTOBER.—The produce extracted during the month of October amounts to 39,904·3 oits.=4600·3167 ozs. troy. It has been derived as follows:—

	Oits.		Tons.	Oits. per ton.
From general mineral	19,563·9	from	3524	= 5·551
Mineral roughly freed from killas	17,954·1	,,	1942	= 9·245
	37,518·0	,,	5466	= 6·862
Re-treatment	2,386·3	,,	—	= ·436
Total	39,904·3	,,	5466	= 7·299

= 4600·3167 ozs. troy = ·8416 oz. per ton.

The above return of gold for October is better than was extracted in the month of September—34,552·1 oits.; October, 39·904·3 oits., the latter thus giving 5352 oits. more than than the former month.

The standard yield per ton of the whole body of mineral treated is also higher, being 7·299 oits., as compared with 6·981 oits. obtained in September. During the month of October we have continued to suffer inconvenience from the poor body of mineral still remaining on the spalling-floors. The labour of dealing with it has been less than was incurred in the month of September. In the latter month we have had a steady and regular supply, though not always of average quality, from the mineral lode.

COST AND PROFIT.

The produce for October being	39,904·3 oits.			
Deduct loss melting into bars	187·9 ,,			
	39,716·4, at 7s. 9d. per oit. =	£15,390	2	1¼
Cost—Labour Rs. 32,727 @ 419				
Other charges 32,592 @ 501 = Rs. 65,319 @ 920, at 2s. 0½d. per milrei		6,688	1	6¼
Profit for the month of October		£ 8,722	0	7

The cost is about 270*l.* more than was incurred in September. We have had some extra payments, which were made in October, and we have used a large quantity of timber in the mine. Notwithstanding, the profit is larger than was realised during the two previous months.

MINE DEPARTMENT.—There has been a pretty regular attendance of natives during the month, excepting on the occasion of the native holidays. The past fortnight of this month has given a very steady attendance of borers and other natives in this department. The timbering of the mine is going on steadily and effectively, being kept as close as practicable to the working. A large quantity of runners and blocking has been used, and a very unusual quantity of candeas. Some parts of the levels and tunnels at surface have been repaired and put in order in anticipation of heavy rains. At present the stoping is becoming more regular, being now carrying on the quarrying of mineral in the eastern section of the excavation. The sinking, and at the same time making eastward, are found together to be tedious and expensive; but it will be very advantageous to gain eastward the desired mineral line, that the stoping down from section 216 may meet on the level of the sump. The mineral hauled and delivered at surface during the past two weeks averages 248 mine wagons daily.

REDUCTION DEPARTMENT.—Excepting while undergoing necessary repairs, the stamping mills have been kept regularly at work throughout the two past weeks. They have been fully supplied with mineral, broken rather under the usual guage. There still remains a stock on the floors of general mineral, which rather impedes the work of spalling. An increased quantity of sand continues to be caught and subjected to the amalgamation process, to the full extent of our barrel space. There has been an increase in the loss of quicksilver, some of the sand having been poor in auriferous quality, and rather difficult to amalgamate. Having now a good supply of water, the stamping mills and general machinery are being driven at fair speed, being all fully at work.

The Praia works, employed in the re-treatment of sand, have also a full supply of water, and the command of a large stock of sand to treat, whether in the arrastras or stamps.

GOLD EXTRACTED TO DATE.—The produce from the mineral stamped during the first division of November, being a period of eight days, amounts to 9787·8 oits. It has been derived as follows:—

	Oits.		Tons.	Oits. per ton.
From general mineral	3987·0	from	1020	= 3·908
Mineral roughly freed from killas	5095·2	,,	550	= 9·264
	9082·2	,,	1570	= 5·794
Re-treatment of sand by arrastras	705·6	,,	—	= ·443
Total	9787·8	,,	1570	= 6·234

Equal to ... 1128·3735 ozs. = ·7187 oz. troy per ton.

Although there has been more mineral reduced in this first division of November —1570 tons—than was pulverised in the same division of October—1383 tons—a difference of nearly 200 tons, yet the gold return was greater in October both as regards standard yield—7·703 per ton, and the daily produce of 1331 oits. The mineral had more poor mixed with it, and has been much lighter, hence the larger quantity stamped, and the lower return of gold.

The gold troop was dispatched from Morro Velho, taking nine bars of gold weighing in all 38,947·3 oits. = 374·1656. lbs. troy for shipment per Douro (s.) for England.—N.B.: The gold has duly arrived.

The following telegrams have been received on Nov. 21, dated Rio, Nov. 13:—"Produce for month (October) 39,500 oits. Yield 7·3 oits. per ton."

On Nov. 25, dated Rio, Nov. 23, "Produce eight days (first division of November 9750 oits. Yield, 6·2 oits. per ton. Profit for the month (October) 8700*l.*"

On Dec. 6, dated Rio, Dec. 4, "Produce 12 days (second division of November 14,250 oits. Yield, 6·9 oits. per ton."

On Dec. 13, dated Rio, Dec. 12, "Produce for month (November) 38,000 oits. Yield, 7·1 oits. per ton."

DON PEDRO NORTH DEL REY.—Report for October: Produce from 1325·45 tons (dry weight) 3518 oits. = 1495*l.* 3s.—Cost: Ordinary, including all general expenses, 1975*l.* 11s. 9d. Although the cost is considerably reduced, and would still be less had it not been for the present high prices of provisions and the want of so many materials to carry on dead work, as regards repairs to machinery, plant, &c., so very much out of order.—Telegram from Rio, Dec. 10, referring to a later date than the above report, advised 6000 oits. for the month of November. Sinking resumed; pumps working well.

PITANQUI (Gold).—Mr. Hilcke (Pari, Nov. 14) reports that good duty had been done in driving the adit during October, 6 fms. having been driven, making a total length of 29 fms. of this adit completed on Oct. 30.

SANTA BARBARA (Gold).—Mr. Hilcke, Nov. 14: During October 1022 tons of mineral were stamped, yielding 3·719 oits. per ton, or a total of 3801 oits. of gold, which, valued at 8s. 6d. per oit., amounts to 1615*l.* 8s. 6d., as the estimated value of the produce for the month. The mine working cost for the same period was, at exchange 24½d., 910*l.* 0s. 5d., thus leaving an estimated profit of 705*l.* 8s. 1d. for October. The capital expenditure during the month on the No. 5 stamps and new Senzala, amounted to 166*l.* 3s. 11d.—Mine: The lode in No. 1 stope was of the same nature as when last advised, and its contraction had apparently a downward tendency, for at the top part of No. 2 stope the same was also becoming smaller and inferior in quality. The lode about here is evidently considerably disturbed, but Mr. Hilcke was of opinion that this is merely one of the changes to which the Pari lode is at times subject. At the other points of operation no notable change had taken place in the appearance and quality of the lode. The No. 1 shaft had been sunk 9 ft. on the course of the lode during the month, making its total depth below adit 21 fms. 2 ft., and the lode in it continued much the same in size and appearance. The sinking of the shaft was suspended on Nov. 1, being deep enough for another level, No. 5, and it was intended to stope away the ground north of the shaft to the place of the projected new sump shaft. When this point is reached the sinking will be resumed and carried on in the new shaft from the horizon of the adit by means of a new hauling machine. The quantity of ore raised during the month amounted to 1314 tons, of which 292 tons were rejected as refuse stone, and 1022 tons treated at the stamps. Average quantity of ore raised per borer for the month 27·8 tons.

[For remainder of Foreign Mines see to-day's Journal.]

THE KROEHNKE AMALGAMATION PROCESS.

Among numerous special buildings at Machinery Hall was one erected by the Republic of Chili, to accommodate a large and elaborate working model, serving to illustrate the Kroehnke amalgamation process. The model is a copy in all its details of works at Antofagasta, Copiapo, province of Atacama. It is on the scale of one-sixth, and the minature engines which put it in motion were supplied with steam from an adjacent boiler.

The ore, which is, as we understand, both custom and purchased, is when delivered sampled. The sample is crushed in two pairs of rolls, and subsequently reduced to a fine powder, from which the material for the assay is taken. After sampling the ore is conveyed by means of a tramway to large cones lying in the rear above the crushing apparatus, into which its discharge is regulated by an automatic feeder, which, though its merits are not striking, possesses at least the advantage of being simple.

The crushing is effected by a pair of wheels of 5000 to 6000 lbs. each, rotating around a vertical axis in a trough. In the model there are six of these "trapiches," the capacity of which amounts to about 6½ to 7 tons per day, so that 12 are necessary for a mill working 75 tons. The power for such an output would foot up to about 70-horse power. The crushed ore is carried off from the trough by a constant stream of running water in the shape of lime, as it is considered imperative for the subsequent amalgamation that the ore should be in a fine state of division. The slime is allowed to settle in tanks, from which, after settling, the supernatent clear water is gradually drawn off as much as practicable. It is then dried, which in a climate like that of Chili is done by spreading it in the sun. The dry ore is carried to the amalgamating mill proper, and is charged into horizontal barrels of 7½ ft. diameter and 8½ ft. in length, making from three to five rotations per minute. They are arranged in pairs, one on each side of the main line of shafting, to which they are directly geared. This arrangement does not permit the isolating of any one pair, for the purpose of either changing its speed independently of the others, or of stopping it altogether. Therefore, half the barrels at least must be charged and emptied at the same time as the 24 barrels used are arranged in two sets of 12. They require 89 to 90-horse power, the same engine, however, sufficing to move other appliances to be mentioned hereafter. The capacity of the barrels varies, of course, according to the nature of the ore treated, but it may for ordinary rebellious material be placed at about 75 tons per day. The charge, varying from 2½ to 4 tons, is mixed with a hot saturated solution of salt, until it has assumed the consistency of a thick paste, and then a saturated solution of sub-chloride of copper is added, this being the chief feature of Mr. Kroehnke's processs, as it is destined to perform the chlorination of the silver, thus doing away with any previous delicate chlorination roasting process, which the European method of barrel amalgamation requires. Mr. Kroehnke prepares his solution of sub-chloride of copper by dissolving 5 per cent. of the weight of the ore in salt water, and by adding to it a solution of sulphate of copper of 20° Baume until saturation, and then heating the mixture by steam of three atmospheres. In order to prevent chemical changes he acidifies with sulphuric adid. The solution is considered fit for use when 50 c.c. poured into a liter of water becomes turbid from sub-chloride of copper.

The amount of solution used necessarily varies according to the amount of silver in the ore, and the nature of the gangue. Clay and oxide of iron, which are indifferent, require less than, for instance, lime, which decomposes the sub-chloride. If there be more than 1 per cent. of antimony or arsenic in the ore a preliminary roasting is required; small amounts of blende, copper pyrites, or galena do not affect the results materially.

After having added the solution, the barrels are rotated for 10 to 12 hours making about four revolutions per minute, at the end of which time the chlorination has been effected. In order to prevent a loss of quicksilver in the subsequent amalgamation by the formation of chloride of quicksilver through the agency of chloride of copper resulting from some of the chemical reactions during the period, metallic zinc or lead is added, which decomposes the chloride of copper. The same is done when docile silver ores containing horn silver are under treatment. An addition of 25 per cent. of lead silver in the ore has been known to have reduced the loss of quicksilver from 150 per cent. to 25 per cent.

After the chlorination is complete, quicksilver in amounts varying from 20 to 25 times as much as there is silver in the ore is added. It is important that the mass should have the proper degree of consitency, so as to render a fine division of quicksilver throughout the whole possible. The barrels are again revolved for six to eight hours at the rate of three to five revolutions per minute, according to the nature of the material and its richness.

When the amalgamation is considered complete the whole is washed from the barrels and led through gutters into the settling apparatus, when the amalgam is separated from the slime by water kept in constant motion by revolving arms. The slimes pass off with the current of water, and the amalgam gathers in the bottom of the vessel, from which it is drawn. The liquid amalgam contains a large surplus of quicksilver, which Mr. Kroehnke removes by a centrifugal machine making 2500 revolutions per minute, instead of filtering it through canvas, as is done in most mills. If the amalgam be white it is considered clean enough to proceed directly to distilling; if, however, it shows blacks streaks, indicating the presence of oxide and sulphide of copper, it is brought into two small barrels similar to the large ones, two of which are attached to every set of 12. In these barrels it is carefully cleaned by washing with hot salt water.

The pure dry amalgam is stamped into sheet-iron cylinders composed of two parts, so that by drawing a bolt they may be easily removed, leaving a column of amalgam weighing from 1200 to 1500 lbs. It is conveyed to the distilling room lifted by a crane upon a small car, on which stands a cast-iron vat filled with water. The amalgam is placed upon a tripod standing in this vat. The sheet-iron shell is now removed, and the car run under a vertical wrought iron cylinder closed on the top. Its inside diameter is but little larger than that of the amalgam column—about 16 in. The vat, tripod, and amalgam are now raised by a simple contrivance, so that the two latter enter the cylinder, the lower end of which dips into the water for about 6 in. We have thus a vertical retort, closed at the bottom by water, and within its upper end the amalgam. The upper two-thirds of the retort is surrounded by a fire of charcoal or coke, inclosed within a cylindrical fire-brick furnace. The fire being started, the quicksilver of the amalgam distills, and its heavy vapours are condensed in the water closing the retort until after 14 or 16 hours the operation is finished. The silver is then lowered from the retort, the water poured off, and the quicksilver returned to the main mill, where, after having been used some five or six times in succession, it is found necessary to purify it by the addition of 20 grammes of Crooke's sodium amalgam to every 100 kgr. of quicksilver. Four retorts are deemed amply sufficient for the output of 24 barrels.

The metallic silver is re-melted in a reverberating furnace and freed from arsenic, if present, by stirring with an iron rod. The silver is cast into moulds holding from 70 to 90 kgr. placed on a car. The whole distilling apparatus is so contrived as to be easily manipulated by one man, who may easily be controlled, thus avoiding the danger of loss by the pilfering propensities of the workmen, who are tolerably well aware of the value of the material which is being dealt with.

The chief feature of this process is the chlorination by means of the sub-chloride of copper solution, which in most cases, when there is not too much antimony and arsenic, avoids any roasting whatever, and always evades a chlorination roasting, a difficult, costly, and comparatively wasteful process, which, though very much improved by the introduction of several furnaces of recent date, has not yielded more than 95 per cent. of the entire amount of silver in the ore in the shape of chloride of silver. The process is said to be peculiarly adapted to the treatment of ores, the chief gangue of which is calc-spar, which in chlorination roasting would, if present in large quantities, require so large an addition of pyrites or sulphur for the decomposion of the salt as to make it practically impossible. Compared with the direct use of chloride of copper, the substitution of sub-chloride effects a very considerable saving of quicksilver, as has been proved by experience in Chili.

Mr. Kroehnke claims the process to be efficient also for the extraction of gold, but no data have come within our notice to warrant an opinion. It would be manifestly unfair to argue from the fact that in the European barrrel amalgamation the extraction of gold is not so complete as in the Washoe process, that the same must apply to this process also. The losses of silver are asserted to amount 1½ per cent. Mr. Kroehnke has received an award both at the Chili Exhibition, at Santiago, in 1875, and at Philadelphia in 1876.—*Iron Age* (New York).

TESTING AND WORKING SILVER ORES.

There is probably nothing which so much facilitates the profitable working of mines as the application of sound practical knowledge by those entrusted with the management, for it as really surprising to observe how much the practical man will do with inexpensive apparatus and machinery producible on the spot, whilst the theoretical manager will will place the concern on the road to ruin by waiting for machinery obtainable only after long delays, during which the fixed charges necessarily going on are eating up the working capital, and at a great distance from the mines. But, inasmuch as even among practical men it is found that some are much more ready than others in determining how to adapt themselves to the circumstances of the moment, and utilising the resources within their reach, such treatises as these are particularly valuable. It is a knowledge of this fact that has induced Mr. Charles H. Aaron to contribute so many useful memoirs, addressed especially to practical men, to the San Francisco Mining and Scientific Press, and his "Practical Treatise on Testing and Working Silver Ores," which Messrs. Dewey and Co. the proprietors are now publishing (London: Trübner, Ludgate-hill; or Sampson Low and Co., Fleet-street) will make his name still more favourably known amongst miners. In 1869 Mr. Aaron described a mode of treating certain refractory silver ores without roasting, so as to make them yield 90 per cent. of the assay, and this has since been tested on the large scale with excellent results. He now treats of silver mining generally, and writes so as to be understood by common miners and prospectors. He remarks that in all silver regions there is found more or less silver ore in the form of small veins or threads, as the Mexicans say, or in bunches, pockets, and deposits of little extent, which while they will not justify the attention of capitalists might yet furnish profitable occupation to a number of miners if the owners only had sufficient knowledge to extract the silver in a cheap and simple way.

In the mineral districts of Mexico nearly every miner has some knowledge, however rude, of metallurgical operations, which enables him to work in one way or another any small rich hilo which he may discover, and though in large operations the Mexican may not be able to compete with more enterprising people, yet it is a fact that among miners and prospectors a Mexican will make a good living where an American would starve to death. Though he writes mainly for the benefit of the poor and unlearned class in the American mining districts, it is not to be supposed that his methods are not adapted to large operations; on the contrary, he maintains that if his modification of the old fondon of Alonzo Barba had been adopted for the Comstock mines long ago many millions of dollars which are now in the Carson river might be in the pockets of stockholders, and the value of stocks would be proportionally higher. The whole of his directions are concise and clear. The prospector, having found a sample that looks promising, is directed to grind a few ounces of the ore to powder between two rocks, add to it about one-tenth as much salt, and about half that quantity of sulphate of iron, often called copperas, mix all together, and put it into an old shovel or frying pan, which should have been previously smeared with clay or mud, and dried, then roast it over a fire, being careful to stir it often with a piece of stout iron wire. Let the roasting proceed quite gently as long as a smell of burning sulphur can be perceived, not allowing the heat to exceed a dark red as seen at night. When the fumes of sulphur cease let the heat increase to a rather light red, but not so as to melt the ore, stirring it still with the wire. The smell will now be that of chlorides, rather pungent, often sweet, as of new hay, but very easily distinguished from that of sulphur. The ore will swell and appear woolly, and somewhat sticky, and a few minutes of this hotter roasting will finish it well enough for your purpose. Now transfer the roasted ore to a flat rock and let it cool; add a little more salt and enough water to make it like mortar; imbed in the mass a strip of clean sheet copper, and let it remain ten minutes; take the copper out, and, without touching the part that has been in the pulp, wash the mud off it with clean water. If the ore contain silver it will invariably show as a white coating on the copper, and as no other metal will so coat the copper under these conditions the appearance of such a coating is proof positive of the presence of silver. The white coating will be heavier or lighter according to the richness of the ore; if very heavy it will appear grey and rough.

Having enabled his readers to determine for themselves whether or not they have a silver ore to deal with, Mr. Aaron explains the method of testing for a process by which to treat it, for, as he remarks, if the ore be very rich it will, of course, bear transportation to a market; yet the losses, expenses, and discounts which are inseparable from this way of disposing of it have caused miners in general to entertain a strong, and not unfounded, objection to selling their ores, especially when the market is very distant; and he explains that, whether the mill is to be large or small, it is equally necessary to find out before building it whether the ore can be worked raw, or must be roasted or smelted. Mr. Aaron next describes his process for working ores, and he remarks that his first operation was conducted on about a grain of ore in a minute porcelain cup, with the aid of a copper belt rivet, the next was on 5 lbs. of ore in a kettle, then on 1 ton in a wooden barrel, and subsequently thousands of tons have been worked by it, and near $1,000,000 extracted. The method of working roasted ores, the leaching processes, and smelting, are then referred to; and he observes that when a Mexican finds rich ore, and can get galena in the vicinity, he puts up a little furnace of adobes, smelts out his silver-lead, refines it in another little furnace, and buys his beans with the proceeds. Why, aske Mr. Aaron, cannot intelligent Americans, who have opportunities of seeing smelting carried on, go and do likewise? In course of time the knowledge would spread, and many honest miners might profit by their discoveries, instead of waiting for capital, or abandoning their mines because thy cannot sell them. Kroencke's process, in use at Copiapo, Chili, is next described, and he points out the advantages of light stamps over heavy ones, and speaks highly of Crocker's trip-hammer battery, which is claimed to crush 5 cwts. per hour with one-horse power. Paul's pulverising barrel, Kendall's battery, Noices's pulveriser, are fully described; and, referring to amalgamators, he says that the man who though poor in pocket has rich ore need not despair of getting along if he has energy and some ingenuity. A five-gallon beer barrel will make an admirable amalgamator for 50 lbs. of ore, which if worth $500 per ton will yield as much money as 1 ton of Comstock ore at $12·50, the barrel being mounted and turned "by hand or foot, dog, squaw, Chinaman, horse, water, or steam power;" whilst a wash-tub will serve for a separator. Aaron's amalgamator, improved separators, retorts, &c., are in turn described, and there are also explanations of the methods of making various rough and ready apparatus of ample efficiency for the practical miner's purpose.

The treatise is altogether an excellent one for the practical man, and although rather expensive according to English notions—half-a-guinea for 100 small pages of large print—it contains quite as much as one who is accustomed to mining will require to know to enable him to rely much more fully upon himself when working in distant countries. In the Pacific region of the United States the book, which is less than half-an-inch thick, including a stout leather binding, deserves to become the constant pocket companion of everyone engaged in either mining or prospecting.

TRANSMITTING ROTARY MOTION.—A portable apparatus for transmitting rotary motion to various appliances, such as deck scrubbing machines, drills, sewing machines, and other like appliances, and it relates more particularly to supporting the apparatus by the human body, and making it easy of movement in various directions when required, and firm when necessary, has been invented by Mr. JOHN MABSON of Manchester. He employs a plate which is connected to a belt for passing round the waist or other part of the human body. To the plate a disc is attached by means of a swivel joint or other attachment which allows of the disc moving in various directions. The disc carries a bracket, between which and the disc the inner end of a stem which carries the driving mechanism is received. The bracket has projections which fit into recesses in the stem; a bolt passes through the stem and through the bracket, and on this bolt is a spring which clamps the stem to the bracket and holds the two firmly together, while the projections in the recesses prevent the stem being raised or lowered in the bracket when the apparatus is being worked. In some cases he fits a spring catch on the plate to take into the disc and prevent it moving when so required. At a convenient distance from the body the stem carries a driving wheel which is provided with one or more crank handles for the purpose of turning it, and a band from this wheel passes over a pulley at the outer end of the stem to which the appliances to be driven are connected. For driving a drill or boring tool the band from the driving wheel in the stem passes over a pulley on the outer end of the stem, which pulley is mounted on the same shaft as a bevel wheel in gear with another wheel on the tool shaft. For sewing machines the belt from the driving wheel on the stem is passed over the pulley of the machine, and thus gives motion to the working parts of the machine, the stem prevents the machine being drawn towards the operator. In some cases the bracket may for convenience of movement be made without the projections described, a spring being, however, still employed to clamp the bracket and stem together. Although he prefers the mode described of fastening the stem to the body, other modes may be adopted—such, for example, as ratchets and pauls.

CUPOLA FURNACES.—The improvements invented by Mr. HUGH FORD, of Macclesfield, relate to those descriptions of cupola furnaces which are divided into two chambers, the upper one constituting the melting place, and the lower one the purifier. In accordance with this invention the upper chamber should be constructed of a taper form, communicating by means of a taper tube with the upper part of the lower chamber or purifier, which is of dome shape. The wind or blast is carried from the blower to the tuyeres through channels or casings within the brickwork of the furnace, or secured to the outside of the iron casing, or by an annular pipe running round but detached from the furnace, or by separate pipes from the blower to each tuyere, as may be found most convenient. There are six tuyeres in the upper chamber, four entering horizontally at such an angle as to give the air a circular motion round the melting place, and the two perpendicularly, blowing downwards through the taper tube of the upper chamber into the lower chamber, carrying or blowing off all slag or cinder floating on the melted iron in the purifier through an orifice left for the purpose in the door or other convenient part of the purifier. In this construction of cupola or foundry furnace great economy of fuel is ensured, with great speed in melting iron and other metals, and at the same time such metals are rendered much cleaner and purer than if melted by any other system.

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With Revised List of Prices of
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Can be obtained, post free, by application to
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W. and S. FIRTH undertake to CUT, economically, the hardest CANNEL, ANTHRACITE, SHALE, or ORDINARY COAL, ANY DEPTH, UP TO FIVE FEET.
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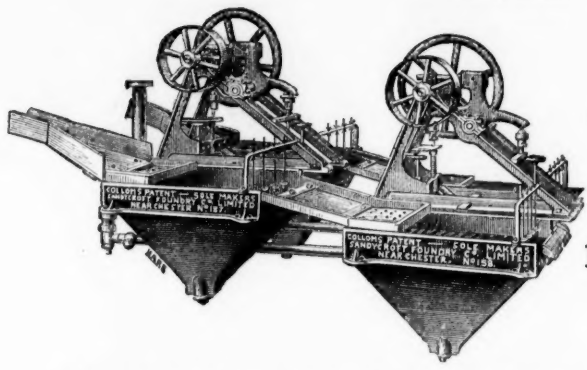
LATE THE MOLD FOUNDRY CO. (ESTABLISHED 1838).

SOLE MAKERS IN GREAT BRITAIN.



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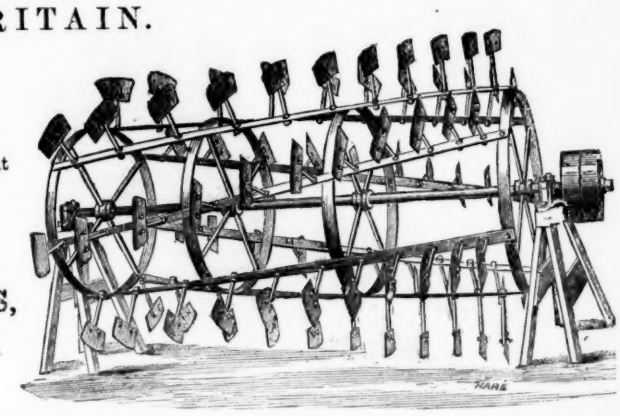
PUMPING & WINDING ENGINES,

PITWORK, CRUSHING MILLS,

ROLLS

OF PECULIARLY HARD AND TOUGH MIXTURE

&c., &c.



COLLOM'S PATENT AUTOMATIC ORE WASHING MACHINE, working at the following and many other Lead, Copper, Blende and Tin Mines:—Great Laxey, Cape Copper, Pontgibaud, Linares, Alamillos, West Tolgus, Lisburne, Minera Halvans, Snailbeach, &c.; and also at Messrs. Vivian and Sons' Works, Swansea.

PATENT IMPELLER, OR KNIFE BUDDLE, in use at the following and many other Lead, Copper, Blende, and Tin Mines:—The Van, Roman Gravels, Tankerville, Ladywell, Lisburne, East Black Craig, Old Treburgett, Penhale & Barton, Bog, Linares, Fortuna, Alamillos, Minera Halvans, &c.

LONDON OFFICE: 6, QUEEN STREET PLACE, E.C.

The "Burleigh" Rock Boring Company, Limited,

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RICHARD MOTTRAM, Secretary.

This Company Sell or Let out on Hire their **ROCK BORING MACHINERY**, or they Contract for the Execution of Rock Excavations, such as Shafts and Tunnels, by the aid of the "Burleigh" Rock Boring Machinery.

EXTRACTS FROM RECENT TESTIMONIALS.

JOHN ROBINSON, Talysarn, near Carnarvon.

"The 'Burleigh' Rock Drills are working very satisfactorily, and I purpose adopting them throughout all my quarries."

"The Dowlais Iron Company, after a severe trial, have approved of these Machines for Deep Borings in their Limestone Quarries, where they are in daily use, boring holes 18 to 20 feet deep by 3 to 4 inches diameter, operated by one of their own workmen."

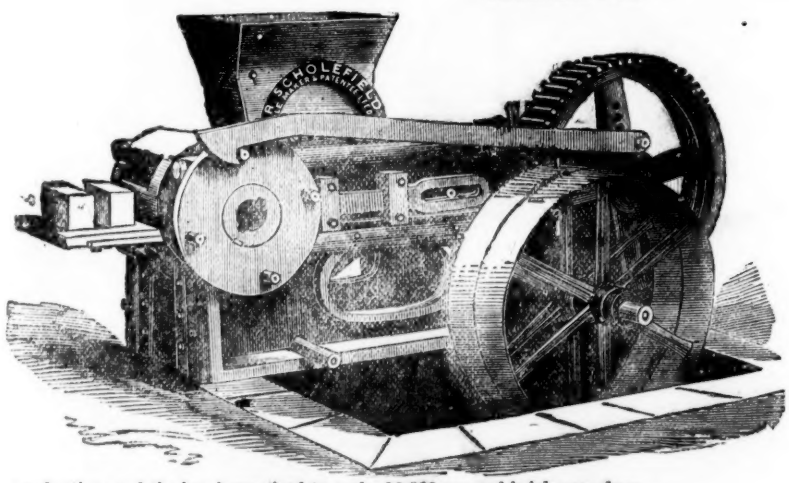
CAUTION.—It having come to the knowledge of the Directors of this Company that certain unscrupulous persons are offering for Sale Rock Boring Machines as improvements on the "Burleigh" invention, and which Machines are Infringements of this Company's Patents, Notice is hereby given to intending Purchasers and Users that this Company will proceed at law against all Infringers of their Patent Rights, whether Makers, Vendors, or Users.

NOTICE—SEE REDUCED PRICE LISTS.

R. SCHOLEFIELD'S

LATEST PATENT BRICK-MAKING MACHINE.

PATENTED 1873.



R. S. begs to call the attention of all Colliery Owners in particular to his PATENT SEMI-DRY BRICK MACHINE, and the economical method of making bricks by his patent machinery from the refuse that is taken from the pits during the process of coal-getting, which, instead of storing at the pit's mouth (and making acres of valuable land useless), is at once made into bricks, at a very small cost, by R. S.'s Patent Brick-making Machinery. If the material is got from the pit hill, the following is about the cost of production, and the hands required to make 10,000 pressed bricks per day:—

2 men digging, each 4s. per day	£0 8 0
1 man grinding, 4s. 6d. per day	0 4 6
1 boy taking off bricks from machine, and placing them in barrow ready for the kiln, 2s. per day	0 2 0
1 boy greasing, 1s. 6d. per day	0 1 6
1 engine-man, 5s. per day	0 5 0
1 man wheeling bricks from machine to kiln, 4s. per day	0 4 0
Total cost of making 10,000 pressed bricks	£1 5 0, or 2s. 6d. per 1000.

(SETTING AND BURNING SAME PRICE AS HAND-MADE BRICKS.)

N.B.—Where the material can be used as it comes from the pit, the cost will be reduced in digging.
As the above Machinery is particularly adapted for the using up of shale, bind, &c., it will be to the advantage of all Colliery Owners to adopt the use of the said Brick-making Machinery.

THE MACHINES CAN BE SEEN IN OPERATION AT THE WORKS OF THE SOLE MAKER AND PATENTEE DAILY.

SCHOLEFIELD'S ENGINEERING & PATENT BRICK MACHINE WORKS, KIRKSTAL ROAD, LEEDS.

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Crab Winches, Pulley and Snatch Blocks, Screw and Lifting Jacks, Ship Knees, Forgings, and Use Iron of all descriptions.

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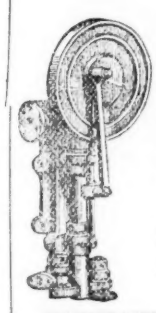
MANUFACTURERS OF



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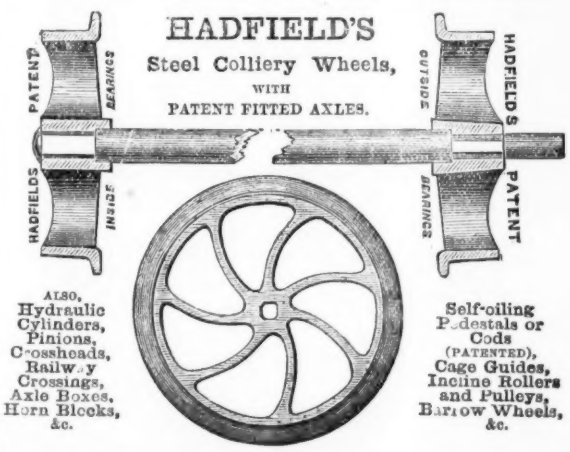

ALSO,
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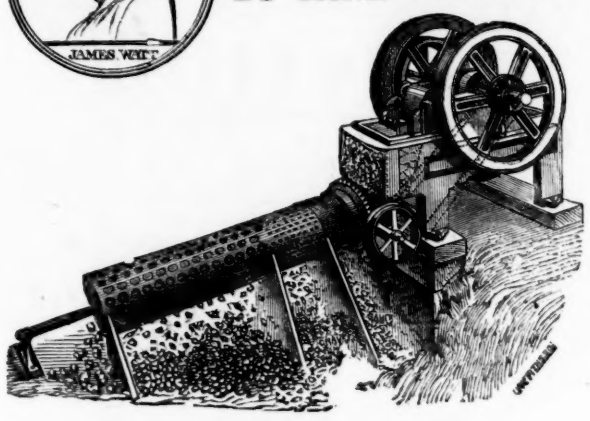

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Specially designed and largely used for

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AT ALL THE PRINCIPAL WORKS IN THE KINGDOM.

Takes in 20 in. by 9 in., and is shown by TESTIMONIALS to be breaking from 1000 to 1200 tons per day of 10 hours, at THREE HALF-PENCE PER TON.

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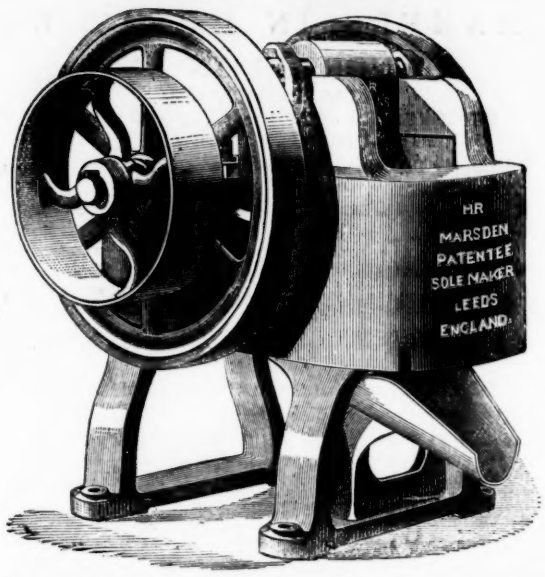
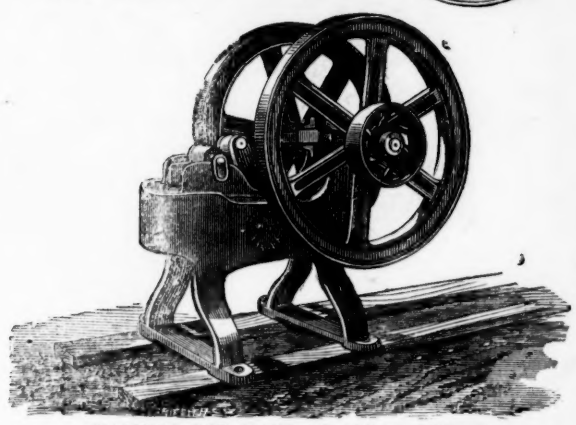


"The Machine is well designed, simple, but substantially made and is capable of reducing any material to fine gravel, such as copper ore, and is certainly preferable to the stamps in use for that purpose."—*Mining Journal.*



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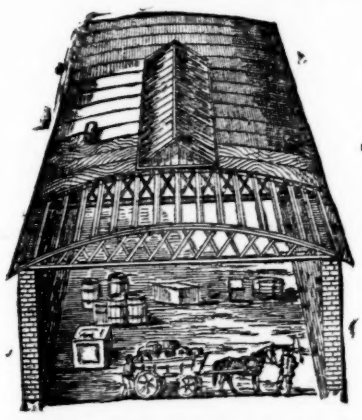

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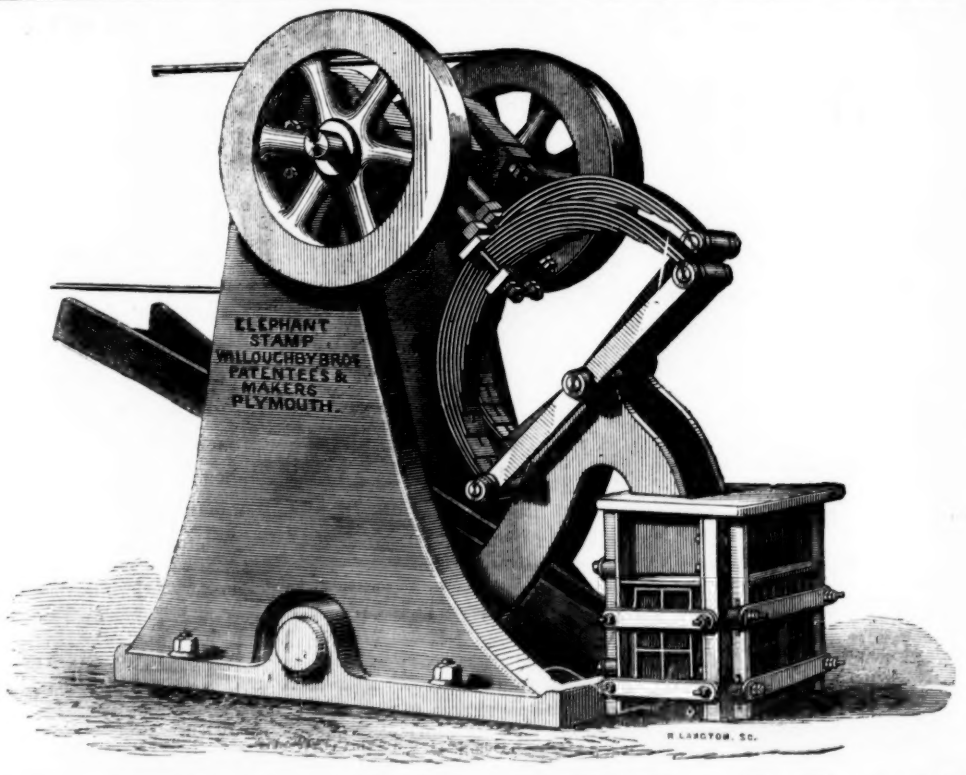

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